



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Central Regional Office • 8 New Bond Street, Worcester MA 01606 • 508-792-7650

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Kathleen A. Theoharides
Secretary

Martin Suuberg
Commissioner

June 22, 2021

John Mainini
Town of Milford Sewer Department
P.O. Box 644
Milford, MA 01757

RE: Public Comment Notice for
Draft Individual Reclaimed Water Use Permit
Milford Wastewater Treatment Plant, 230 South Main Street, Hopedale, MA
MassDEP Transmittal No. X287311
Permit No. 923-1

Dear Permittee:

The Massachusetts Clean Waters Act (M.G.L. c.21, s.26-53) was amended by Chapter 246 of the Acts of 1973 to authorize the Massachusetts Department of Environmental Protection (the MassDEP), to regulate discharges into all waters of the Commonwealth, including groundwaters. The MassDEP regulates discharges through the issuance of discharge permits, which impose limitations on the amount of pollutants that may be discharged in the effluent, together with monitoring and reporting requirements and other conditions to insure adequate treatment of all liquid wastes prior to discharge.

The MassDEP has completed its technical review of your application submitted on behalf of the Milford Wastewater Treatment Plant to reuse treated effluent as cooling tower make up water at the Milford Power Limited Partnership (MPLP) located at 108 National Street in Milford, MA, and has developed the conditions contained in the enclosed draft permit.

The proposed draft permit can only be considered in draft form because of provisions in the Law regulating public notice of the proposed issuance of the permit and opportunity for public comments and public hearing. Following receipt of comments on the public notice, and public hearing, if held, the MassDEP will issue its final determination to issue or deny the permit.

Enclosed herewith is a copy of the public notice for your reclaimed water use permit. The enclosed public notice should be published to start the thirty (30) day public comment period.

This information is available in alternate format. Contact Michelle Waters-Ekanem, Director of Diversity/Civil Rights at 617-292-5751.

TTY# MassRelay Service 1-800-439-2370

MassDEP Website: www.mass.gov/dep

Printed on Recycled Paper

In accordance with 314 CMR 2.06(4) and M.G.L. c.30A, the applicant or permittee, as applicable, shall publish public notice of the permit proceedings in *The Environmental Monitor*, a publication of the Massachusetts Executive Office of Energy and Environmental Affairs. For instructions on filing this notice with MEPA please refer to MEPA's website at <http://www.mass.gov/eea/agencies/mepa/submitting-notices-to-the-environmental-monitor.html>

The applicant or permittee shall submit to the Department a copy of the public notice as published in the *Environmental Monitor*, within seven days after the date of publication or at such other time as the Department requires. This information should be sent to the attention of David Boyer at the above letterhead address. The mandatory thirty day public comment period will commence with the date of publication of the public notice.

If you have any questions on any of the information discussed in this letter, please contact James Laughlin at james.laughlin@mass.gov.

Sincerely,

A handwritten signature in cursive script that reads "David Boyer".

David Boyer
Section Chief
Wastewater Program

Db/hs: X287311pn (Milford)-185

cc: Milford Board of Health

Purna Rao – MassDEP CERO Permit Coordinator

PUBLIC NOTICE
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER RESOURCES/WASTEWATER MANAGEMENT PROGRAM
8 NEW BOND STREET
WORCESTER, MA 01606
508-792-7650

Notice is hereby given that the following application for an Individual Groundwater Discharge Permit is being processed and the following actions being proposed thereon pursuant to Section 43 of Chapter 21 of the General Laws, and 314 CMR 5.00 and 2.06:

CITY/TOWN:	Milford
PROJECT NAME:	Milford Wastewater Treatment Plant Reclaimed Water Use Permit
APPLICANT:	Town of Milford Sewer Department
FACILITY LOCATION:	230 South Main Street, Hopedale, MA
TYPE OF DISCHARGE:	Reclaimed Water Use
QUANTITY OF DISCHARGE:	1,500,000 gallons per day
PERMIT NO:	923-1
TRANSMITTAL NO:	X287311
PROPOSED ACTION:	Tentative determination to issue individual reclaimed water use permit

A copy of the application, draft permit, and statement of basis or fact sheet relative to the draft permit may be obtained from the MassDEP's Wastewater Management Program at the above address and telephone number or online at: <http://www.mass.gov/eea/agencies/massdep/news/comment/>

Comments on the proposed action or requests for a public hearing thereon pursuant to 314 CMR 2.07 must be filed with MassDEP at the above address within thirty (30) days of this notice. For information on the process for formally intervening in adjudicatory proceedings, please refer to 310 CMR 1.00: Adjudicatory Proceedings, Section (7) Intervention and Participation.
<http://www.mass.gov/eea/agencies/massdep/water/regulations/310-cmr-1-00-adjudicatory-proceedings.html>

David Boyer
Section Chief
Wastewater Program



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INDIVIDUAL RECLAIMED WATER USE PERMIT

RECLAIMED WATER USER: MILFORD POWER LIMITED PARTNERSHIP

Name of Applicant: Town of Milford Sewer Department
P.O. Box 644
Milford, MA 01757

Date of Application: April 1, 2021

Application/Permit No. #923-1

Date of Issuance: DRAFT

Date of Expiration: DRAFT

Effective Date: DRAFT

AUTHORITY FOR ISSUANCE

Pursuant to authority granted by Chapter 21, Sections 26-53 of the Massachusetts General Laws, as amended, 314 CMR 2.00, and 314 CMR 20.00, the Massachusetts Department of Environmental Protection (the Department or MassDEP) hereby issues the following permit to: Town of Milford, (hereinafter called "the permittee") authorizing the use of reclaimed water originating from the Milford Wastewater Treatment Plant (WWTP) at 230 South Main Street, Hopedale, MA for continued use as **cooling tower make up water at the Milford Power Limited Partnership (MPLP)** located at **108 National Street, Milford, MA**. This use of reclaimed water is subject to 314 CMR 20.03(6)(b), such authorization being expressly conditional on compliance by the permittee with all terms and conditions of the permit hereinafter set forth.

David Boyer, P.E.
Bureau of Water Resources

Date

This information is available in alternate format. Contact Michelle Waters-Ekanem, Director of Diversity/Civil Rights at 617-292-5751.
TTY# MassRelay Service 1-800-439-2370
MassDEP Website: www.mass.gov/dep

Printed on Recycled Paper

I. SPECIAL CONDITIONS

The permittee is authorized to supply final effluent from the Milford WWTP reclaimed water to the Milford Power Limited Partnership (MPLP) for use in its cooling system.

- A. Reclaimed Water Characteristics:** During any day in which the permittee provides reclaimed water for cooling, the reclaimed water shall not exceed the following limits:

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>
Flow	1,500,000 gallons per day
Biochemical Oxygen Demand (BOD)*	30 mg/l
Total Suspended Solids (TSS)*	30 mg/l
Fecal Coliform*	200 cfu/100 ml
Total Chlorine Residual*	11.0 ug/l
pH*	6.5-8.5 SU The pH of the effluent shall not be more than 0.2 standard units outside of the naturally occurring range.

*The effluent characteristics stated above shall be as reflected on the current National Pollutant Discharge Elimination System (NPDES) discharge permit issued to the Town of Milford (#MA0100579).

- B. Monitoring and Reporting Requirements:** The permittee currently submits a monthly Discharge Monitoring Report (DMR) to the Department under the terms of its NPDES discharge permit (#MA0100579). During any month that the permittee provides reclaimed water to MPLP, the permittee's NPDES DMR shall also serve to report the quality of the reclaimed water provided. The permittee shall also submit in its DMR a written summary of the quantity (in gpd) of reclaimed water provided to MPLP each day for that month.

Reports shall be prepared on an acceptable form, properly filled out and signed in accordance with the aforementioned NPDES requirements.

Submission of monitoring reports in electronic format is available through eDEP and serves as data submission to both the Regional and Boston offices. To register for electron submission, go to: <http://www.mass.gov/eea/agencies/massdep/service/online/edep-online-filing.html>

C. Supplemental Conditions

1. The Town of Milford (the permittee) shall ensure that Milford Power Limited Partnership complies at all times with the terms and conditions stated within the following documents (attached herein):
 - a. Agreement between Milford Power Limited Partnership and Town of Milford, Exhibit A.
 - b. 1991 Rider Agreement between Milford Power Limited Partnership and Town of Milford, Exhibit B. This exhibit also includes the Distribution of Reclaimed Water and the NPDES Permit as sub-exhibit A; the Impact Monitoring and Mitigation Plan as sub-exhibit B; and the Zoning Board of Appeals decisions as sub-exhibit C.
 - c. Reuse Management Plan, Exhibit C.
 - d. Charles River Monitoring Program and Quality Assurance Project Plan (QAPP), Exhibit D.
2. The permittee shall notify the Department at least thirty (30) days in advance of the proposed transfer of ownership of the facility at which the reclaimed water is used. Said notification shall include a written agreement between the existing and new permittees containing a specific date for transfer of permit, responsibility, coverage and liability between them, including without limitation, assumption of the existing permittee's responsibility under the Reuse Management Plan and all Service and Use Agreements.
3. The permittee shall notify the Department of any changes to the Service and Use Agreement and/or the Reuse Management Plan. The permittee shall not implement any of the changes until the Department approves the document(s).
4. In accordance with 314 CMR 12.04, the permittee shall submit to the Department a staffing plan for the Milford WWTP at least every two years, and whenever there are staffing changes. The staffing plan shall include the following components:
 - a) The operator(s)'s name(s), operator grade(s) and operator license number(s);
 - b) The number of operational days per week;
 - c) The number of operational shifts per week;
 - d) The number of shifts per day;
 - e) The required personnel per shift;
 - f) Saturday, Sunday and holiday staff coverage;
 - g) Emergency operating personnel
5. The permittee is responsible for the operation and maintenance of all sewers, pump stations, and conveyance system between the Milford WWTP and MPLP, and the treatment units which shall be operated and maintained under the direction of a properly certified wastewater operator.
6. Operation and maintenance (O&M) of the proposed facility must be in accordance with 314 CMR 12.00, "Operation and Maintenance and Pretreatment Standards for Wastewater

Treatment Works and Indirect Discharges", and, 257 CMR 2.00, "Rules and Regulations for Certification of Operators of Wastewater Treatment Facilities".

- a) The facility has been rated (in accordance with 257 CMR 2.00), to be a Grade 7 facility. Therefore, the permittee shall provide for oversight by a Massachusetts Certified Wastewater Treatment plant operator (Chief Operator) Grade 7 or higher. The permittee will also provide for a backup operator who shall possess at least a valid Grade 7 license.
 - b) The date and time of the operator's inspection along with the operator's name and certification shall be recorded in the log book on location at the treatment facility. All daily inspection logs consistent with the O&M Manual requirements shall be kept at the facility for a period of three (3) years.
 - c) Records of operation of wastewater treatment facilities or disposal systems required by the Department shall be submitted on forms supplied by the Department or on other forms approved by the Department for such use. Monthly reports shall be certified by the wastewater treatment plant operator in charge and shall be included in the discharge monitoring reports submitted each month.
7. If the operation and maintenance of the facility is to be contracted to a private concern, the permittee shall submit a copy of the contract, consistent with what is required by the approved Operation & Maintenance manual and signed only by the contractor, to the appropriate MassDEP Regional Office within thirty (30) days of permit issuance. Along with the contract, a detailed listing of all contract operation obligations of the proposed contractor at other facilities shall also be submitted.
 8. Any source of flow to MPLP, other than that from Milford WWTP effluent, shall be approved by MassDEP and the local Board of Health prior to the connection.
 9. In year 2027, simultaneously with the permit renewal application at year fifteen, the permittee shall submit the following to the Department for its review and approval:
 - a) An engineering report, prepared by a registered professional engineer, that outlines in sufficient detail what modifications (if any) to the facility or other changes are required to insure that the facility can remain in compliance with its reclaimed water permit and other applicable requirements through the next 5 year permit term (year 2032) and beyond.
 - b) A financial plan that contains the cost estimates for implementing the facility modifications or other changes identified in the engineering report required in Paragraph 9. a), and proposed schedule of actions to be taken by the permittee to finance the needed facility modifications or other changes.

10. Any discharge from MPLP returned to the Milford WWTP through the sewer collection system shall not cause any demonstrable adverse effect on Milford WWTP.
11. In the event that reclaimed water limits or other conditions are not met, the permittee may be obligated to modify, supplement or replace the permitted treatment process so as to ensure that the discharge meets the requirement of this permit.
12. The permittee shall ensure that MPLP tests the effluent prior to discharge into the sanitary sewer system in accordance with its sewer use agreement with the Town of Milford.
13. The permittee shall ensure that the standards and monitoring requirements are met when MPLP is in operation.

D. Appeal Rights

During the thirty (30) day period following issuance of this permit, a Notice of Claim for an Adjudicatory Appeal may be sent by any person aggrieved (the "Petitioner") by the issuance to:

Case Administrator
Office of Appeals and Dispute Resolution
Department of Environmental Protection
One Winter Street/2nd Floor
Boston, MA 02108

310 CMR 1.01(6)(b) requires the Notice of Claim to: include sufficient facts to demonstrate aggrieved person status; state the facts which are grounds for the appeal specifically, clearly and concisely; and, state relief sought. The permit shall become or remain effective at the end of the 30 day appeal period unless the person filing the Notice of Claim requests, and is granted, a stay of its terms and conditions. If a permit is modified under 314 CMR 2.10, only the modified terms and conditions may be subject to an Adjudicatory Appeal. All other aspects of the existing permit shall remain in effect during any such Adjudicatory Appeal.

Per 310 CMR 4.06, the hearing request to the Commonwealth will be dismissed if the filing fee is not paid. Unless the Petitioner is exempt or granted a waiver, a valid check payable to the Commonwealth of Massachusetts in the amount of \$100.00 must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

The filing fee is not required if the Petitioner is a city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority effective January 14, 1994, or any municipal housing authority; or, per MGL 161A s. 24, the Massachusetts Bay Transportation Authority. The Department may waive the adjudicatory hearing filing fee for a Petitioner who shows that paying the fee will create an undue financial hardship. A Petitioner seeking a waiver must file, along with the hearing request, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

II. GENERAL PERMIT CONDITIONS

20.18: General Permit Conditions

The following conditions from 314 CMR 20.18(2) (a) through (p) apply to all reclaimed water permits.

(a) Beginning on the effective date and lasting through the expiration of the permit, the permittee is authorized to use, sell, distribute, and offer for use, sale, or distribution reclaimed water only in accordance with the permit, 314 CMR 20.00, the Massachusetts Uniform Plumbing Code, 248 CMR 10.00, and a Reuse Management Plan approved by the Department.

(b) The use, sale, distribution, or offering for use, sale, or distribution of reclaimed water other than as expressly authorized by the permit, 314 CMR 20.00, and a Reuse Management Plan approved by the Department, is prohibited.

(c) The permittee shall at all times operate and maintain the facilities used to produce, and/or distribute reclaimed water in accordance with the permit, 314 CMR 20.00, the approved Operations and Maintenance Plan, the approved Reuse Management Plan, 314 CMR 12.00, 257 CMR 2.00, and 314 CMR 20.00.

(d) In the event that the permittee proposes to reuse reclaimed water for a use at a reuse site, by a person, or for a purpose that is not identified in the approved Reuse Management Plan, and/or not authorized by this permit, the permittee shall notify the Department in writing of the proposed change and request modification of the permit. The permittee shall not commence the proposed use unless and until the permit has been modified and the use has been approved by the Department in writing.

(e) The permittee shall give prior notice to the Department as soon as possible of any planned physical alterations or additions to the treatment works or any activity that could significantly change the nature or increase the quantity of pollutants in the reclaimed water. The permittee shall not make the proposed alteration, or construct the proposed addition, unless and until it is approved in writing by the Department.

(f) The permittee shall notify the Department of any non-compliance with the requirements of 314 CMR 20.00 that may endanger the public health or the environment within 24 hours from the time that the permittee became aware of the noncompliance. Said notice may be oral or by facsimile or email. A written submission shall also be submitted to the Department within five days of the time that the permittee became aware of the non-compliance. The written submission shall contain a description of the non-compliance, including exact dates and times, and, if the non-compliance has not been corrected, the anticipated time it is expected to continue and the steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

(g) The permittee shall allow the Department and its authorized representatives to enter upon the permittee's premises where an activity related to the production, use, sale, or distribution of the reclaimed water is located or conducted or where records required by the permit are kept. The Department shall have access to inspect and copy at reasonable times any records that must be kept by the permittee under the conditions of the permit, inspect at reasonable times any facilities, equipment, practices or operations regulated or required under the permit, and sample or monitor the reclaimed water at reasonable times for the purpose of determining compliance with the terms and conditions of the permit.

(h) There shall be no bypassing of untreated or partially treated wastewater to the reclaimed water distribution system or to any reuse site at any time. The reclaimed water produced by the reclaimed water system shall at all times meet the requirements of its classification and use, including, without limitation, the requirements set forth in 314 CMR 20.17. Reclaimed water that does not meet the requirements of its classification and use shall be diverted from the reclaimed water distribution system to an alternate discharge location, to a sewer system with a discharge at another location, or to storage facilities and managed in accordance with all applicable regulations.

(i) The permittee shall notify the Department by telephone, facsimile or email in accordance with 314 CMR 20.18(2)(f) within 24 hours of any time that the permittee discovers that the reclaimed water does not meet the requirements of its classification and use. Reclaimed water not meeting the requirements of its classification and use shall not be discharged to the reclaimed water distribution system or to any reuse site without the prior approval of the Department.

(j) At each reuse site, the public shall be notified that reclaimed water is being used and that the reclaimed water is not safe for drinking. This notification shall include the posting of signs of sufficient size to be clearly read at all reuse sites. For any reuse site that is under the direct control of the permittee, the permittee shall provide the required notice. For any reuse site not under the direct control of the permittee, this requirement shall be expressly included in a Service and Use Agreement. The Service and Use Agreement shall provide that the permittee shall enforce this requirement and that the Department has authority under 314 CMR 20.00 to enforce this requirement.

(k) The permittee shall develop and implement a cross connection control inspection and testing program that contains all the components of a cross connection program established pursuant to 310 CMR 22.22 and that ensures compliance with the Massachusetts Uniform Plumbing Code, 248 CMR 10.00, at each reuse site. A registered cross connection prevention device or cross connection control method that meets the requirements of 310 CMR 22.22 and the Massachusetts Uniform Plumbing Code, 248 CMR 10.00, shall be provided at all potable water system connections, and all connections to

pipes conveying water for drinking, domestic and culinary purposes that are located at reuse sites.

(l) The permittee shall not distribute reclaimed water to a person, or offer reclaimed water for use, sale or distribution by another person, without a Service and Use Agreement between said person and the permittee that has been approved by the Department in writing. The permittee shall not distribute reclaimed water to a satellite reclaimed water system for further distribution by that system unless there is a Service and Use Agreement approved by the Department in writing between the owner of the satellite reclaimed water system and each user of the reclaimed water. The permittee shall submit all required Service and Use Agreements to the Department for its review and approval before they are signed.

(m) Duty to Mitigate. The permittee shall take all reasonable steps to minimize or prevent any adverse impact on human health or the environment resulting from non-compliance with the permit or 314 CMR 20.00.

(n) Duty to Halt or Reduce Activity. Upon reduction, loss or failure of a component of the treatment works, the permittee shall control the production, use, sale and distribution of reclaimed water to the extent necessary to maintain compliance with its permit, the approved Reuse Management Plan and 314 CMR 20.00, until the affected component is restored or an alternative component is provided. It shall not be a defense to an enforcement action for a permittee to maintain that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with a condition of the permit, the approved Reuse Management Plan, and 314 CMR 20.00.

(o) Power Failure. In order to maintain compliance with all the terms and conditions of the permit, the permittee shall provide an alternative power source sufficient to operate the entire treatment works. In the event of the failure of the alternative power source, the permittee shall halt, reduce or otherwise control the production, use, sale or distribution of the reclaimed water upon the reduction, loss or failure of the primary source of power to the treatment works or any component thereof.

(p) Reclaimed water may not be used in a manner that will cause or contribute to a violation of the Massachusetts Surface Water Quality Standards or cause the water quality of any public or private water supply to violate the standards set forth in the Drinking Water Regulations of Massachusetts, 310 CMR 22.00.

Additional General Conditions. The conditions set forth in 314 CMR 20.18(2)(a) through (k) apply to every reclaimed water system permit issued under 314 CMR 20.00 whether expressly incorporated therein.

(a) The permittee shall furnish to the Department within 21 days any information that the Department may request to determine whether cause exists for modifying, revoking,

renewing or terminating the permit or to determine whether the permittee has complied with or is complying with all the terms and conditions of the permit.

(b) Nothing in the permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities or penalties to which the permittee is or may be subject to under any Federal or State law or regulation.

(c) Solids, sludges, filter backwash or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner that is consistent with applicable Federal, State and local laws and regulations.

(d) Monitoring. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. Monitoring shall be conducted according to the latest edition of Standard Methods for the Examination of Water and Waterworks prepared by the American Public Health Association, American Waterworks Association, and the Water Environment Federation, the latest edition of Methods for Chemical Analysis of Water and Wastes prepared by EPA, the latest edition of Water Standards of the American Society for Testing Materials, or other test procedures specified in the permit or approved by the Department. Analyses of samples shall be conducted at a laboratory certified by the Department.

(e) Record Keeping. The permittee shall retain records of all monitoring information including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit for a period of at least three years from the date of the sample, measurement, report or application. The period may be extended by request of the Department at any time. Records of monitoring information shall include the date, exact place and time of sampling or measurement, the individual who performed the sampling or measurement, the date analyses were performed, the individual who performed the analyses, the analytical techniques or methods used, and the results of such analyses.

(f) Monitoring results shall be reported at the intervals specified in the permit. If the permittee monitors any pollutant more frequently than required by the permit, the results of this monitoring shall be included in the calculation and reporting of the data required by the permit.

(g) Except as otherwise provided, any permittee required to obtain a reclaimed water system permit issued by the Department pursuant to M.G.L. c. 21, § 42 and 314 CMR 20.00, shall be required annually to submit an annual compliance assurance fee in accordance with 310 CMR 4.00. The requirement to submit the annual compliance fee does not apply to any local government unit other than an authority.

(h) The permittee shall submit to the Department for its review and approval an Operations and Maintenance Plan and Staffing Plan at least forty-five days prior to the date the reclaimed water system commences operation or the use of the reclaimed water commences, whichever first occurs. The Operation and Maintenance Plan shall document how the permittee intends to operate and maintain and staff the reclaimed water system in accordance with all applicable requirements including the permit, 314 CMR 20.00, 257 CMR 2.00, and 314 CMR 12.00. The Operation and Maintenance Plan shall include a preventative maintenance program to ensure that all equipment is kept in a reliable condition. The Operation and Maintenance Plan shall include a plan to staff the reclaimed water system, including, without limitation, 257 CMR 2.00. The Operation and Maintenance Plan shall also include an emergency contingency plan that establishes standard operating procedures that must be followed when the reclaimed water does not meet the applicable effluent limits.

(i) The permittee shall submit a revised Operation and Maintenance Plan whenever there are modifications to the reclaimed water system, the standard operating procedures for the system, or the staff of the reclaimed water system.

(j) The permittee shall not implement any changes to the reclaimed water system unless and until the Department approves the revised Operations and Maintenance Plan required by the permit.

(k) If the permittee intends to enter into a contract with a third party (the contract operator) for the operation and maintenance of the reclaimed water system, at least 45 days prior to the date the system commences operation, the permittee shall submit a draft unsigned contract to the Department for its review and approval. The contract shall provide that the contract operator shall operate and maintain the reclaimed water system in accordance with the approved Operation and Maintenance Plan and Staffing Plan, 314 CMR 20.00, 314 CMR 12.00, and 257 CMR 2.00. The permittee shall not execute the contract and authorize the contract operator to commence operation of the reclaimed water system unless and until the Department has approved the contract.

Exhibit A

Agreement between Milford Power Limited Partnership and
Town of Milford

**AGREEMENT
BETWEEN
MILFORD POWER LIMITED PARTNERSHIP
AND
THE TOWN OF MILFORD ACTING THROUGH
THE MILFORD SEWER COMMISSIONERS
AND THE MILFORD BOARD OF SELECTMEN**

SPK
July
SWM
[Signature]
[Signature]
This Agreement is made and entered into as of the 31ST day of July, 1991 by and between the Town of Milford, Massachusetts ("Milford"), acting through the Milford Sewer Commission (the "Commissioners") and the Milford Board of Selectmen (the "Selectmen"), and Milford Power Limited Partnership, a Massachusetts limited partnership ("MPLP").

W I T N E S S E T H

WHEREAS, MPLP will own and operate an approximately 140 megawatt combined cycle electric generating plant to be constructed on National Street in Milford (the "Powerplant"). MPLP wishes to purchase from Milford, and Milford wishes to sell to MPLP, effluent (the "Effluent") produced by the Milford Wastewater Treatment Facility (the "Treatment Facility") operated by the Commission for use as cooling water in the Powerplant.

WHEREAS, the Effluent from the Treatment Facility, operated by the Commissioners, is, at present, discharged into the Charles River.

NOW THEREFORE, in consideration of these premises and the mutual promises contained herein, and other good and valuable consideration, the receipt of which is hereby acknowledged, the Town of Milford and MPLP agree as follows:

1. PURCHASE AND SALE OF EFFLUENT - MPLP shall have the prior right to purchase from the Commissioners, and the Commissioners shall have the obligation to sell to MPLP, up to 1.5 million gallons per day of the total amount of Effluent discharged from the Treatment Facility, if any, on the terms and conditions hereinafter set out and subject only to those certain restrictions on diversion of Effluent from the Charles River set forth in condition #36 in that certain Special Permit issued by the Milford Zoning Board of Appeals, dated as of May 15, 1991, in connection with the construction of the Powerplant and such other restrictions on diversion of Effluent from the Charles River as may from time to time be imposed by any appropriate federal or state agency with jurisdiction.

MPLP shall have such prior right, over all other potential users, for use of the Effluent at the Powerplant and not for resale, from day to day at any and all times, upon the terms herein set forth. Other potential users of Effluent may purchase or acquire only such amounts which were made available to MPLP on a day to day basis, but were affirmatively declined to be purchased by MPLP on such basis. Such prior right to purchase up to 1.5 million gallons per day of the total amount of Effluent discharged from the Treatment Facility shall apply, day to day, without regard to the amount purchased by MPLP in the preceding days. In the event that streamflow in the Charles River is at or below 150% of the amount below which a restriction on the diversion of Effluent, as referred to above, would apply, the Commissioners agree to curtail

all sales to potential users other than MPLP. MPLP shall not be obligated to purchase any minimum amount at any time.

2. PRICE/BILLING - MPLP shall pay the Commissioners for Effluent supplied to the Powerplant in accordance with the following schedule:

<u>Price per 1,000 gallons</u>	<u>Portion of Sales Term in which Price is Applicable</u>
\$.35	First 5.0 years
\$.40	Second 5.0 years
\$.45	Third 5.0 years
\$.50	Four 5.0 years
price to be negotiated	Last 10 years

The Commissioners shall bill MPLP not later than the fifth of every month for Effluent delivered in the prior month and MPLP shall pay the amount billed within thirty days after receipt of such bill.

3. TERM - Subject to the satisfaction of all applicable provisions of General Laws, Chapter 30B, regarding the sale or disposition of municipal property, this Agreement shall become effective on the date hereof and shall provide for a Sales Term commencing on the first date on which MPLP purchases Effluent hereunder and extending, unless further extended in accordance with the terms hereof, five (5) years after the date of commencement of such sales.

4. EXTENSION - The Parties agree that the Commissioners shall sponsor an Article at the next special Town Meeting pursuant to General Laws, Chapter 30B, Section 12 to provide that the length of this Agreement be for a period of thirty (30) years from the

date of commencement of sales. Upon, and by virtue of final approval of that Article, this Agreement shall be automatically extended to provide a term of thirty (30) years ending on the 30th anniversary of the date of commencement of sales or such other time frame as is approved by the Town Meeting.

Should Town Meeting not approve an extension of the Sales Term for the purchase of Effluent as provided above, this Agreement may be extended for up to five (5) additional five-year terms by vote of the Commissioners.

5. CONSTRUCTION, MAINTENANCE AND REPAIR - Within sixty (60) days of the receipt by the Town of Milford and/or MPLP of all necessary permits for the Improvements, as defined hereinafter, the Commissioners shall propose construction plans and specifications for construction of (i) the forced main and related improvements (the "Forced Main") necessary to deliver Effluent from the Treatment Facility to the Powerplant and (ii) the sewerage line and related improvements for the delivery of wastewater influent from the property boundary of the Powerplant to the Treatment Facility (the "Sewer Connection") (collectively the "Improvements"), which Improvements shall be in conformity with the standards and requirements of the Massachusetts Department of Environmental Protection, and such other federal, state or local agencies as may have jurisdiction over the projects and in conformity with generally accepted good engineering practices and quality. MPLP shall have a reasonable right to review and approve the proposed plans and specifications prior to the Commissioners going out to

bid on the projects and a similar right to review and approve the cost of the bid(s) received and to be accepted by the Commissioners. The Commissioners and MPLP shall use all reasonable efforts to accomplish their respective obligations with respect to the completion of the Improvements in a timely fashion.

The bid(s) to be accepted by the Commissioners, plus all related design and engineering costs incurred by the Town of Milford with respect to the Improvements, shall constitute the "Total Improvement Cost". That part of the Total Improvement Cost, if any, which is incurred for the "36 inch sewer interceptor" project shall be separately stated and accounted for. The Total Improvement Cost less such part for the 36 inch sewer interceptor project shall be the "Incremental Improvement Cost". The Commissioners shall construct the Improvements in accordance with said plans and specifications on or before June 1, 1992. Consent to an extension of such date shall not be unreasonably withheld by MPLP. Provided that the Town of Milford uses all reasonable efforts to complete construction in a timely fashion, the Town of Milford shall not be liable for any damages or financial harm incurred by MPLP as a result of delay in the completion of the Improvements. ^{SEE Rider attached hereto, Paragraph 1.} On or before the date on which construction of the Improvements shall commence, MPLP shall pay to Milford a sewer connect fee of \$750,000. Milford shall pay the first \$650,000 of the Incremental Improvement Cost, and MPLP shall pay the balance thereof, after the timely completion of the Improvements, within thirty (30) days of receipt of a written request therefor. Upon.

completion of the construction, the Town of Milford shall own the Forced Main and Sewer Connection. Should the Commissioners fail to receive authorization to incur any part of the Total Improvement Cost, MPLP and the Commissioners agree to re-negotiate in good faith a fair and appropriate re-allocation of the Incremental Improvement Cost among the Parties hereto; provided, however, this Agreement shall remain in effect and MPLP shall be entitled to purchase, and the Commissioners shall be obligated to sell, Effluent as provided for herein.

Notwithstanding the foregoing, if MPLP sends notice in writing to the Commissioners that the Powerplant shall not be constructed, MPLP shall thereupon be responsible for the sewer connect fee and the Incremental Improvement Cost only to the extent necessary to hold the Commissioners harmless against costs incurred or liabilities assumed, prior to the date of receipt of such notice, solely on account of the Powerplant and the Commissioners' obligations hereunder. In the case of such notice, the Commissioners shall use their best efforts to cancel or avoid any further liabilities in connection with the Force Main or any part of the Sewer Connection relating solely to the Powerplant.

The Forced Main shall be used for the sole and exclusive purpose of providing Effluent to the Powerplant. MPLP shall be responsible to maintain, repair and keep the Forced Main, and the Commissioners shall be responsible to maintain, repair and keep the Sewer Connection, in good operating condition according to generally accepted engineering practices for the period of this

Agreement. To the extent that MPLP requires access to any easements, rights of ways, or property owned by the Town of Milford, including the Treatment Facility, upon which or within which the Forced Main may be located, the Commissioners shall arrange immediate access to such areas by MPLP, its agents, representatives or independent contractors to perform the necessary maintenance or repair. Whenever access is granted to the Treatment Facility, the chief operator thereof, or his designee, shall accompany the workers of MPLP. The Commissioners, through their agents, shall routinely observe the operation and condition of any part of the Forced Main located at the Treatment Facility and shall inform MPLP in a timely fashion of the need for any repair of maintenance of such parts that they may observe. If the Commissioners, through their agents, observe that emergency maintenance of such parts is needed, the Commissioners, through their agents, shall use their best efforts to give immediate notice thereof to MPLP, by telephone calls to one or more names on a "List of Emergency Personnel" posted at the Treatment Facility by MPLP, and shall thereupon make access to the Treatment Facility immediately available to representatives of MPLP which may respond to such telephone calls. SEE Rider attached hereto, Paragraph 2.

6. EFFLUENT AVAILABILITY - The Parties acknowledge that approximately 2.8 million gallons a day of Effluent is currently discharged from the Treatment Facility. However, the Commissioners do not guarantee that any particular quantity of Effluent will be discharged from the Treatment Facility at any particular time. The

Commissioners undertake no responsibility or duty to provide a quantity of Effluent adequate to the needs of the Powerplant. Except with respect to Effluent made available to other users, the Commissioners make no representations or warranties, expressed or implied, of any kind whatsoever as to the availability, rate of flow, or volume of Effluent. In the event that Milford ceases, for whatever reason, to operate the Treatment Facility and the provisions of Paragraph 10 of this Agreement, for whatever reason, do not result in the continued supply to MPLP of treated wastewater by the parties therein listed, then, at the option of MPLP, Milford shall use its best efforts to effect an assumption of the obligation to supply treated wastewater to MPLP as set forth in this Agreement, by the entity or entities which thereafter possess the right to receive the quantities of wastewater influent previously received by the Treatment Facility.

7. QUALITY OF EFFLUENT/INFLUENT - The Parties agree (a) that the quality of Effluent provided by the Commissioners to MPLP must meet the standards set out in Exhibit "A" attached hereto or the standards in effect from time to time under applicable law for the discharge of Effluent from the Treatment Facility to the Charles River, whichever standards provide a higher quality of Effluent, and (b) that the quality of influent delivered to the Treatment Facility by MPLP shall meet the standards in effect from time to time under applicable law for the discharge of industrial wastewater from the Powerplant to the Treatment Facility. The respective Parties agree to engage in all necessary pre-treatment

to meet the foregoing standards including, without limitation, such pre-treatment as may be required under applicable orders and rules for the respective discharges. In the event MPLP requests that the quality of Effluent delivered to the Powerplant exceed the above-referenced standards, the Commissioners shall perform additional pre-treatment as required and all costs so incurred at the Treatment Facility to meet such request shall be reimbursed from MPLP in addition to the charges for Effluent set forth in Paragraph 2 above. In addition to, and not in limitation of the foregoing, the Parties agree that sodium hypochlorite shall be added to the Effluent purchased by MPLP at the Treatment Facility and MPLP agrees to pay the cost of the required amounts of such chemical.

MPLP shall have the right to do such things as are necessary to test the Effluent quality at the Treatment Facility prior to entry into the Forced Main for delivery to the Powerplant and the Commissioners shall have the right to do such things as are necessary to test the influent quality at the Powerplant prior to entry into the Sewer Connection, both so as to determine that the quality in question meets the respective standards set out hereinabove. Each Party shall be granted access to the other's facility upon reasonable notice during such times as necessary to perform such quality testing. In the event the Effluent quality shall not meet the above-referenced standards, without regard to requests to exceed standards, MPLP shall have the right to do such pre-treatment as is necessary to bring the quality to the foregoing standards until such time as the Commissioners comply with such

standards. In such event, the sole and exclusive remedy of MPLP until the Commissioners bring the Effluent quality into compliance with such standards shall be to offset the costs of such pre-treatment performed by MPLP against the amounts otherwise due Milford under the terms of Paragraph 2 of this Agreement, up to a maximum offset of thirty percent (30%) of the amounts due under Paragraph 2 for the Effluent requiring such pre-treatment by MPLP. In the event the quality of the influent from MPLP is substantially different than that set forth hereinabove, the Commissioners shall have the rights available at law and in equity including, but not limited to, refusing to accept the influent.

Each Party agrees to immediately notify the other of changes in Effluent or influent treatment (other than minor changes), long term restrictions on Effluent usage, and/or upsets in Effluent or influent quality.

8. TAX EXEMPTION WAIVER - As additional consideration, MPLP, its transferees, assigns, successors and affiliate shall not apply for manufacturing status as a corporation under General Chapter 59, Sections 5 and 16, or such other statutes or regulations which would exempt the Powerplant, or the owner of the Powerplant, as taxpayers from ad valorem or personal property taxes, in whole or in part.

9. ADDITIONAL CONSIDERATION - As additional consideration, MPLP, its transferees, successors or assigns agree that should the valuation of the Powerplant, as finally determined in accordance with applicable law, result in a yearly tax assessment of less than

one million dollars (\$1,000,000.00) in any year in which the Powerplant is fully operational, MPLP shall pay to the general fund of the Town of Milford an amount equal to the difference between the tax assessment and one million dollars. Such difference shall be paid in equal installments at the time of the regular tax payments.

10. SUCCESSORS AND ASSIGNS - This Agreement shall be binding upon and shall inure to the benefit of the Parties, their successors, transferees, and assigns. This Agreement may be assigned by either Party upon the prior written consent of the other Party, which shall not be unreasonably withheld. Notwithstanding the foregoing, MPLP may assign this Agreement, without the consent of the Town of Milford, to any party in connection with the financing of the Powerplant.

11. MISCELLANEOUS -

A. Both Parties agree to indemnify and hold each other harmless from and against any and all claims for injury or death or damage to property (including cost of litigation and attorney fees) in any manner caused by, arising from, incident to or growing out of services performed by either Party under this Agreement while on the premises of the other Party, except any such claims which may be caused by the sole negligence or intentional wrongdoing of the other.

B. In no event, whether because of a breach of warranty contained in this Agreement or any other cause, whether based upon contract, tort, warranty or otherwise, arising out of the

performance or non-performance by either Party of their obligations under this Agreement, shall either Party be liable for or obligated in any manner to pay special, consequential or indirect damages.

C. This Agreement constitutes the entire and complete Agreement and commitment of the Parties with respect to this Agreement, all prior or contemporaneous understandings, arrangements and/or commitments, whether oral or written, having been merged herein.

D. Neither Party to this Agreement shall have any responsibility whatsoever with respect to services provided or contractual obligations assumed by the other Party, and nothing in this Agreement shall be deemed to constitute either Party a partner, agent or legal representative of the other Party or to create any fiduciary relationship between the Parties.

E. The laws of the Commonwealth of Massachusetts shall govern the validity, interpretation and performance of this Agreement.

EXECUTED on this 31st day of July, 1991.

MILFORD POWER LIMITED PARTNERSHIP

By: Milford Power Associates, Inc.
its General Partner

By: Jude R. Rolfes
Jude R. Rolfes,
its Vice President

TOWN OF MILFORD, BOARD
OF SEWER COMMISSIONERS

By: James V. Melanson
Chairman

TOWN OF MILFORD, BOARD
OF SELECTMEN

By: James V. Melanson
Chairman

EXHIBIT A

MILFORD WATER TREATMENT PLANT
EFFLUENT QUALITY

Handwritten signatures and initials, including "SM" and "VHL", and a large scribble.

	<u>Average*</u>	<u>Maximum</u>
Conductivity, micromhos	500-800	1000
Turbidity NTU	<1	5
Phosphate ppm	<1	3.0
Ammonia ppm	0.2	3.0
Fecal Coliform colonies/100 mils	<5	400
Arsenic ppm	0.005	0.05
Barium ppm	0.1	1.0
Cadmium ppm	0.002	0.05
Chromium ppm	0.01	0.05
Fluoride ppm	<0.5	4.0
Lead ppm	<0.01	0.05
Mercury ppm	<0.0005	0.002
Nitrate ppm	<1.0	25.0
Selenium ppm	<0.002	0.01
Silver ppm	<0.01	0.05
Iron ppm	<0.1	0.3
Copper ppm	<0.05	1.0
Zinc ppm	<0.3	5.0

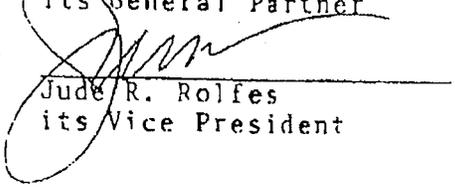
*Running average of ten most recent samples.

RIDER TO AGREEMENT
BETWEEN
MILFORD POWER LIMITED PARTNERSHIP
AND
THE TOWN OF MILFORD

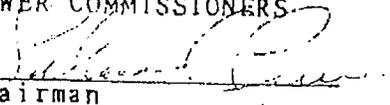
1. In the event the Town of Milford fails to use all reasonable efforts to complete construction of the Forced Main in a timely fashion as provided in paragraph 5 of the Agreement, the liability of the Town of Milford to MPLP shall be the cost of cover for an alternative source of water not to exceed, in the aggregate, \$100,000.00.
2. In the event the Commissioners shall fail in their obligation to observe and/or notify MPLP of the need for any repair or maintenance of the parts of the Forced Main located at the treatment facility as provided in paragraph 5 of the Agreement, the Commissioners shall be liable only for the cost of the repair of such parts and shall not be liable for any damages, direct or indirect, to the Powerplant on account of such failure.

MILFORD POWER LIMITED PARTNERSHIP

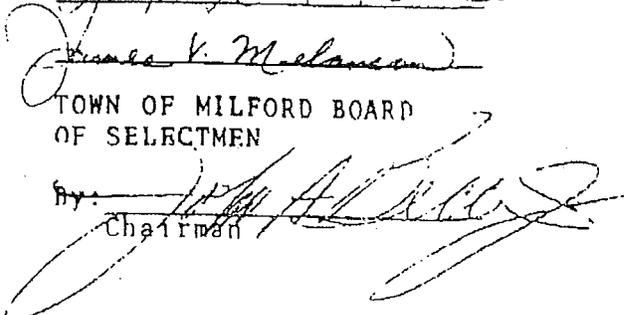
By: Milford Power Associates, Inc.
its General Partner

By: 
Jude R. Rolfes
its Vice President

TOWN OF MILFORD, BOARD
OF SEWER COMMISSIONERS

By: 
Chairman

TOWN OF MILFORD BOARD
OF SELECTMEN

By: 
Chairman

Dated: July 31, 1991

5585A

Exhibit B

1991 Rider Agreement between Milford Power Limited Partnership and Town of Milford

- Sub Exhibit A – Distribution of Reclaimed Water
National Pollutant Discharge Elimination System (NPDES) Permit
#MA0101579
- Sub Exhibit B - Impact Monitoring and Mitigation Plan
- Sub Exhibit C - Zoning Board of Appeals Decision

**RIDER TO AGREEMENT BETWEEN MILFORD POWER LIMITED PARTNERSHIP
AND THE TOWN OF MILFORD ACTING THROUGH THE MILFORD SEWER
COMMISSIONERS AND THE MILFORD BOARD OF SELECTMEN
DATED JULY 31, 1991**

Milford Power Limited Partnership (MPLP) and the Town of Milford, Board of Sewer Commissioners, and Board of Selectmen ("Town of Milford") execute this Rider to the above-mentioned Agreement dated July 31, 1991 (the "Agreement"), in order to comply with the Massachusetts Reclaimed Water Permit Program and Standards Regulations of 314 CMR 20.00, promulgated March 20, 2009. All provisions of the Agreement not amended below remain in full force and effect. Therefore, the Parties agree to the following provisions:

1. The reclaimed water used as cooling water at the MPLP power generation facility in Milford, Massachusetts, is subject under the provisions of 314 CMR 20.03(6)(b). The distribution of the reclaimed water directly to MPLP shall comply with the limits set forth in Exhibit A attached to this Rider.
2. The use of the reclaimed water shall comply with the applicable provisions of 314 CMR 20.00, the relevant provisions of the Town of Milford permit, the provisions of the approved Reuse Management Plan, and the relevant portions of the Uniform State Plumbing Code: 248 CMR 10.00.
3. The Town of Milford and the Massachusetts Department of Environmental Protection shall have the reasonable right to inspect any area where reclaimed water is currently being used by MPLP.
4. If any reclaimed water is used and/or distributed in a manner that materially violates the relevant provisions of 314 CMR 20.00, the permit issued to the Town of Milford, or the approved Reuse Management Plan, then the use and/or distribution of such reclaimed water may be terminated.
5. The reclaimed water is not currently publicly accessible at MPLP; however, should MPLP give reasonable access to the reclaimed water to the public at any time the Agreement is in effect, then MPLP shall comply with any applicable notification requirements set forth in 314 CMR 20.04.
6. MPLP will be held responsible for all actions set forth in Exhibit B attached in accordance with their expired Sewer Extension Permit Renewal #W027308. MPLP is solely responsible for any violations and permit requirements associated with MPLP and will absolve the Milford Board of Sewer Commissioners for all associated fees (i.e. legal, engineering, etc.).

**RIDER TO AGREEMENT BETWEEN MILFORD POWER LIMITED PARTNERSHIP
AND THE TOWN OF MILFORD ACTING THROUGH THE MILFORD SEWER
COMMISSIONERS AND THE MILFORD BOARD OF SELECTMEN
DATED JULY 31, 1991**

7. In accordance with the Special Permit dated May 15, 1991, set forth in Exhibit C, should the utilization of the MPLP power generation facility cease or the MPLP seek bankruptcy, and a violation occurs related to MPLP responsibilities set forth in the requirements of the Reclaimed Water Reuse Permit herein, the Milford Board of Sewer Commissioners shall have access to funds from the Demolition Fund Escrow account established in Condition 4 of the Special Permit to pay for all fees associated with the violation, including but not limited to fines, legal costs and engineering fees.

MILFORD POWER LIMITED PARTNERSHIP,
BY ITS GENERAL PARTNER,
ANP MILFORD POWER COMPANY, LLC,

By:  *WWD*

Name: Charles Davis

Title: Vice President

TOWN OF MILFORD, ACTING
THROUGH THE BOARD OF
SEWER COMMISSIONERS,

By: 

Name: Roy Gier

Title: Chairman, BOSC

Exhibit

A

**RIDER TO AGREEMENT BETWEEN MILFORD POWER LIMITED PARTNERSHIP
AND THE TOWN OF MILFORD ACTING THROUGH THE MILFORD SEWER
COMMISSIONERS AND THE MILFORD BOARD OF SELECTMEN**

EXHIBIT A

Distribution of the reclaimed water directly from the Milford Wastewater Treatment Facility (MWWTF) to Milford Power, LP (MPLP) shall comply with the effluent limitations and monitoring requirements set forth in the current National Pollutant Discharge Elimination System (NPDES) Permit, which is valid for five (5) years from the date of issuance. A copy of the 2010 NPDES Permit has been attached for reference purposes.

Should the MWWTF be in violation of any effluent discharge limitations set forth in the current NPDES Permit, the MWWTF shall promptly notify the MPLP and MassDEP, by written correspondence, of the violation and discontinue distribution to the MPLP facility until the violation has been corrected.



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

DEVAL L. PATRICK
Governor

TIMOTHY P. MURRAY
Lieutenant Governor

IAN A. BOWLES
Secretary

LAURIE BURT
Commissioner

November 3, 2010

Brian Pitt, Chief
NPDES Municipal Permits Branch
USEPA - New England
5 Post Office Square, Suite 100 (OEP06-1)
Boston, MA 02109-3912

Re: **Water Quality Certification**
NPDES Permit MA0100579
Milford Wastewater Treatment Facility

Dear Mr. Pitt:

Your office has requested the Massachusetts Department of Environmental Protection to issue a water quality certification pursuant to Section 401(a) of the Federal Clean Water Act ("the Act") and 40 CFR 124.53 for the above referenced NPDES permit. The Department has reviewed the proposed permit and has determined that the conditions of the permit will achieve compliance with sections 208(e), 301, 302, 303, 306, and 307 of the Federal Act, and with the provisions of the Massachusetts Clean Waters Act, M.G.L. c. 21, ss. 26-53, and regulations promulgated thereunder. The permit conditions are sufficient to comply with the antidegradation provisions of the Massachusetts Surface Water Quality Standards [314 CMR 4.04] and the policy [October 21, 2009] implementing those provisions.

With respect to the winter total phosphorus limit specified in the draft permit, the Department on September 27, 2010 submitted to EPA a report entitled "Total Maximum Daily load for Nutrients in the Upper/Middle Charles River, Massachusetts, Control Number CN272.0". This document establishes a "nutrient" Total Maximum Daily load (TMDL) and corresponding implementation plan for the Upper/Middle Charles River. For point sources, The TMDL establishes total phosphorus (TP) wastewater discharge limits for all wastewater treatment facilities (WWTF) at 0.1 mg/L TP during the summer months and 0.3 mg/L (TP) during the winter months. The TMDL implementation Plan sets out the tasks required to meet the TMDL requirements and envisions a transitional period for WWTFs by setting an interim winter limit on 0.5 mg/L total phosphorus. The implementation plan states in part, " This should be reevaluated after the first 5-year period prior to attaining the final 0.3 mg/L winter limit for total phosphorus."

In addition to the draft permit for the Town's WWTF, EPA recently issued under its Residual Designation Authority (RDA) a draft stormwater permit to three communities in the upper Charles River Watershed. This designation includes the Town of Milford. The Town is currently working with EPA and the other two communities to determine the technical and economic impacts affecting the Town's ability to meet

This information is available in alternate format. Call Donald M. Gomes, ADA Coordinator at 617-556-1057. TDD Service - 1-800-298-2107.

MassDEP on the World Wide Web: <http://www.mass.gov/dep>

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the requirements of the draft permit and nutrient loading goals of the TMDL associated with the discharge of stormwater.

Recognizing the difficult task the Town faces in achieving a comprehensive solution to consistently meeting of the requirements of both the WWTF permit and the RDA Stormwater permit, the Department will regularly evaluate both the Town's role in meeting both the TMDL implementation plan and compliance with winter total phosphorus limit set forth in the permit.

The Department hereby certifies the referenced permit.

Sincerely,

A handwritten signature in cursive script, appearing to read "David Ferris". The signature is written in black ink and is positioned to the right of the word "Sincerely,".

David Ferris, Director
Wastewater Management Program
Bureau of Resource Protection

cc: Kathleen Keohane
File



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MA 02109-3912

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

November 10, 2010

John Mainini, Director of Operations
Milford Wastewater Treatment Plant
P.O. Box 644
Milford, MA 01757

Re: NPDES Permit No. MA0100579

Dear Mr. Mainini:

Enclosed is the final National Pollutant Discharge Elimination System (NPDES) permit issued pursuant to the Clean Water Act (the "Federal Act"), as amended, and the Massachusetts Clean Waters Act (the "State Act"), 21 M.G.L. §§43-45, as amended. The Environmental Permit Regulations, at 40 C.F.R. §124.15, 48 Fed. Reg. 14271 (April 1, 1983), require this permit to become effective on the date specified in the permit.

Also enclosed is a copy of the Massachusetts State Water Quality Certification for your final permit, the EPA's response to the comments received on the draft permit, Part II General Conditions, and information relative to appeals and stays of NPDES permits. Should you desire to contest any provision of the permit, your petition should be submitted to the Environmental Appeals Board as outlined in the enclosure and a similar request should also be filed with the Director of the Massachusetts Wastewater Management Program in accordance with the provisions of the Massachusetts Administrative Procedures Act, the Department of Environmental Protection's Rules for the Conduct of Adjudicatory Proceedings and the Timely Action Schedule and Fee Provisions (see enclosure).

We appreciate your cooperation throughout the development of this permit. Should you have any questions concerning the permit, feel free to contact Betsy Davis at 617/918-1576.

Sincerely,

A handwritten signature in cursive script that reads "Thelma Murphy".

Thelma Murphy, Acting Chief
Municipal NPDES Permits Branch
Office of Ecosystem Protection

Enclosures

Toll Free • 1-888-372-7341

Internet Address (URL) • <http://www.epa.gov/region1>

Recycled/Recyclable • Printed with Vegetable Oil Based Inks on Recycled Paper (Minimum 30% Postconsumer)

**AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**

In compliance with the provisions of the Federal Clean Water Act as amended, (33 U.S.C. §§1251 et seq.; the "CWA"), and the Massachusetts Clean Waters Act, as amended, (M.G.L. Chap. 21, §§26-53),

Town of Milford

is authorized to discharge from the facility located at

**Milford Wastewater Treatment Facility
Route 140
Hopedale, MA 01747**

to receiving water named

Charles River (Charles River Watershed)

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective on the first day of the calendar month following sixty (60) days after the date of signature.

This permit and the authorization to discharge expire at midnight, five (5) years from the effective date.

This permit supersedes the permit issued on February 10, 2005.

This permit consists of 12 pages in Part I, which includes effluent limitations and monitoring requirements, and Attachment A, Chronic Freshwater Toxicity Test Procedures and Protocols, and 25 pages in Part II, which includes General Conditions and Definitions.

Signed this 9th day of November, 2010



Director
Office of Ecosystem Protection
Environmental Protection Agency
Boston, MA



Director
Massachusetts Wastewater Management Program
Department of Environmental Protection
Commonwealth of Massachusetts
Boston, MA

PART 1

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

- During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge treated effluent from outfall serial number 001 to the Charles River. Such discharge shall be limited and monitored by the permittee as specified below.

Effluent Characteristic	Units	Discharge Limitation			Monitoring Requirement	
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency ⁴	Sample Type ⁵
Flow ²	MGD	4.3	---	Report	Continuous	Recorder
Flow ²	MGD	Report	---	---		
BOD ³ , (November 1 through April 30)	mg/l lbs/day	30 1077	45 1614	Report Report	3/Week 3/Week	24-Hour Composite ³ 24-Hour Composite ³
BOD ³ , (May 1 through October 31)	mg/l lbs/day	7 251	7 251	Report Report	3/Week 3/Week	24-Hour Composite ³ 24-Hour Composite ³
TSS ³ (November 1 through April 30)	mg/l lbs/day	30 1077	45 1614	Report Report	3/Week 3/Week	24-Hour Composite ³ 24-Hour Composite ³
TSS ³ (May 1 through October 31)	mg/l lbs/day	7 251	7 251	Report Report	3/Week 3/Week	24-Hour Composite ³ 24-Hour Composite ³
pH ¹		6.5-8.3 (See Condition I.A.1.b.on Page 5)			1/Day ⁵	Grab
Dissolved Oxygen	mg/l	NOT LESS THAN 6			1/Day ⁵	Grab
Fecal Coliform Bacteria ^{1,6} (April 1 through November 30)	cfus/100 ml	200	---	400	3/Week	Grab
Escherichia Coli Bacteria ^{1,6} (April 1 through November 30)	cfus/100 ml	126	---	409	3/Week	Grab

Effluent Characteristic	Units	Discharge Limitation			Monitoring Requirement	
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency ²	Sample Type ⁴
Total Chlorine Residual ^{1,7}	ug/l	11	---	19	1/Week	24-Hour Composite ⁵
Total Ammonia Nitrogen, as N, (May 1 through May 31)	mg/l lbs/day	5 179	5 179	8 287	2/Week 2/Week	24-Hour Composite ⁵ 24-Hour Composite ⁵
Total Ammonia Nitrogen, as N, (June 1 through October 31)	mg/l lbs/day	1.0 36	1.0 36	1.5 54	2/Week 2/Week	24-Hour Composite ⁵ 24-Hour Composite ⁵
Copper, Total ⁸	ug/l	12	----	18	1/Month	24-Hour Composite ⁵
Lead, Total	ug/l	4	---	---	1/Month	24-Hour Composite ⁵
Phosphorus, Total (April 1 through October 31)	ug/l	100	---	---	2/Week	24-Hour Composite ⁵
Phosphorus, Total (November 1 through March 31)	ug/l	300	---	---	1/Week	24-Hour Composite ⁵
Orthophosphate November 1 through March 31)	mg/l	Report	---	---	1/Week	24-Hour Composite ⁵
Aluminum, Total	ug/l lbs/day	89 3.19	---	765 27.3	1/Month 1/Month	24-Hour Composite ⁵ 24-Hour Composite ⁵
LC ₅₀ ^{10,12}	%	---	---	100	4/year ⁹	24-Hour Composite ⁵
Chronic NOEC ^{11,12}	%	---	---	≥ 98	4/year ⁹	24-Hour Composite ⁵

Footnotes:

1. Required for State Certification
2. Report annual average, monthly average, and maximum daily flow. The limit is an annual average, which shall be reported as a rolling average. The value will be calculated as the arithmetic mean of the monthly average flow for the reporting month and the monthly average flows of the previous eleven months.
3. Sampling required for influent and effluent.
4. All sampling shall be representative of the effluent that is discharged through outfall 001 to the Charles River. A routine sampling program shall be developed in which samples are taken at the same location, same time and same day of every month. Any deviations from the routine sampling program shall be documented in correspondence appended to the applicable discharge monitoring report that is submitted to EPA.

All samples shall be tested using the analytical methods found in 40 CFR §136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR §136.

5. A 24 hour composite sample will consist of a least twenty-four (24) grab samples taken during one consecutive 24 hour period (e.g. 0700 Monday to 0700 Tuesday). Once per day (1/Day) is defined as one time each day, during regular business hours.
6. Fecal coliform bacteria discharges shall not exceed a monthly geometric mean of 200 colony forming units (cfu) per 100 ml, nor shall they exceed 400 cfu per 100 ml as a daily maximum. *E. coli* discharges shall not exceed a monthly geometric mean of 126 colony forming units (cfu) per 100 ml, nor shall they exceed 409 cfu per 100 ml as a daily maximum. The average monthly limits for fecal coliform bacteria and *E. coli* are expressed as geometric means.

The fecal coliform bacteria limits and monitoring requirements are in effect only for the duration of the first April 1- November 30 period following the effective date of the permit. For example, if the permit becomes effective on October 1, 2010, the fecal coliform limits and monitoring requirements will be in effect for only October and November 2010.

The *E. coli* monitoring requirements are in effect upon the effective date of the permit. The limits become effective on the April 1 following the end of the period in which the fecal coliform limits are effective. For example, if the permit becomes effective on October 1, 2010, the permittee shall monitor *E. coli* beginning in October 2010, but the limits will not become effective until April 1, 2011. The monitoring frequency for *E. coli* before the limits go into effect is 1/month. After the limits are in effect, the monitoring frequency is 3/week.

7. Total residual chlorine monitoring and reporting are required if chlorine is added to the treatment process for disinfection or other purposes. If chlorine is not added at any time during a reporting month, a no discharge code shall be reported on the discharge monitoring report for that month.

The minimum level (ML) for total residual chlorine is defined as 20 ug/l. This value is the minimum level for chlorine using EPA approved methods found in the most currently approved version of Standard Methods for the Examination of Water and Wastewater, Method 4500 CL-E and G. One of these methods must be used to determine total residual chlorine. For effluent limitations less than 20 ug/l, compliance/non-compliance will be determined based on the ML. Sample results of 20 ug/l or less shall be reported as zero on the DMRs.

8. The minimum detection level (ML) for copper is defined as 3.0 ug/l. This value is the minimum detection level for copper using the Furnace Atomic Absorption analytical method. For effluent limitations less than 3.0 ug/l, compliance/non-compliance will be determined based on the ML. Sample results of 3.0 ug/l or less shall be reported as zero on the Discharge Monitoring Report.
9. The permittee shall conduct chronic (and modified acute) toxicity tests four times per year. The chronic test may be used to calculate the acute LC₅₀ at the 48 hour exposure interval. The permittee shall test the daphnid, Ceriodaphnia dubia, only. Toxicity test samples shall be collected during the second week of January, April, July and October. The test results shall be submitted by the last day of the month following the completion of the test (February 28th, May 31st, August 31th and November 30th). The tests must be performed in accordance with test procedures and protocols specified in Attachment A, Chronic Freshwater Toxicity Test Procedures and Protocols of this permit.

Test Dates Second week	Submit Results By:	Test Species	Acute Limit LC ₅₀	Chronic Limit C-NOEC
January April July October	February 28 th May 31 st August 31 th November 30 th	<u>Ceriodaphnia dubia</u> (daphnid) See Attachment A	≥ 100%	≥ 98%

10. The LC₅₀ is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) shall cause no more than a 50% mortality rate.
11. C-NOEC (chronic-no observed effect concentration) is defined as the highest concentration of toxicant or effluent to which organisms are exposed in a life cycle or partial life cycle test which causes no adverse effect on growth, survival, or reproduction at a specific time of observation as determined from hypothesis testing where the test results exhibit a linear dose-response relationship. However, where the test results do not exhibit a linear dose-response relationship, the permittee must report the lowest concentration where there is no observable effect. The "98% or greater" limit is defined as a sample which is composed of 98% (or greater) effluent, the remainder being dilution water.
12. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall either follow procedures outlined in Attachment A (Toxicity Test Procedure and Protocol) Section IV., DILUTION WATER in order to obtain an individual approval for use of an alternate dilution water, or the permittee shall follow the Self-Implementing Alternative Dilution Water Guidance which may be used to obtain automatic

approval of an alternate dilution water, including the appropriate species for use with that water. This guidance is found on the EPA, Region I web site at <http://www.epa.gov/region1/enforcementandassistance/dmr.pdf>. If this guidance is revoked, the permittee shall revert to obtaining individual approval as outlined in Attachment A. Any modification or revocation to this guidance will be transmitted to the permittees. However, at any time, the permittee may choose to contact EPA-New England directly using the approach outlined in Attachment A.

Part I.A.1 (continued)

- a. The discharge shall not cause an excursion of the water quality standards of the receiving waters.
- b. The pH of the effluent shall not be less than 6.5 nor greater than 8.3 at any time.
- c. The discharge shall not cause objectionable discoloration of the receiving waters.
- d. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.
- e. The permittee's treatment facility shall maintain a minimum of 85 percent removal of both total suspended solids and biochemical oxygen demand. The percent removal shall be based on monthly average values.
- f. The results of sampling for any parameter done in accordance with EPA approved methods above its required frequency must also be reported.
- g. If the average annual flow in any calendar year exceeds 80 percent of the facility's design flow, the permittee shall submit a report to MassDEP by March 31 of the following calendar year describing its plans for further flow increases and describing how it will maintain compliance with the flow limit and all other effluent limitations and conditions.

2. All POTWs must provide adequate notice to the Director of the following:

- a. Any new introduction of pollutants into that POTW from an indirect discharger which would be subject to section 301 or 306 of the Clean Water Act if it were directly discharging those pollutants; and
- b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
- c. For purposes of this paragraph, adequate notice shall include information on:
 - (1) The quantity and quality of effluent introduced into the POTW; and
 - (2) Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

3. Prohibitions Concerning Interference and Pass-Through:

- a. Pollutants introduced into POTW's by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.

4. Toxics Control

- a. The permittee shall not discharge any pollutant or combination of pollutants in toxic amounts.
- b. Any toxic components of the effluent shall not result in any demonstrable harm to aquatic life or violate any state or federal water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards.

5. Numerical Effluent Limitations for Toxicants

EPA or MassDEP may use the results of the toxicity tests and chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to Section 304(a)(1) of the Clean Water Act (CWA), state water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including but not limited to those pollutants listed in Appendix D of 40 CFR Part 122.

B. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from the outfall listed in Part I A.1. of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs) are not authorized by this permit and shall be reported to EPA and MassDEP in accordance with Section D.1.e. (1) of the General Requirements of this permit (Twenty four hour reporting).

Notification of SSOs to MassDEP shall be made on its SSO Reporting Form (which includes MassDEP Regional Office telephone numbers). The reporting form and instruction for its completion may be found on-line at <http://www.mass.gov/dep/water/approvals/surffms.htm#sso>.

C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II and the following terms and conditions:

1. Maintenance Staff

The permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit.

2. Preventative Maintenance Program

The permittee shall maintain an ongoing preventative maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer system infrastructure. The program shall include an inspection program designed to identify all potential and actual unauthorized

discharges.

3. Infiltration/Inflow Control Plan:

The permittee shall continue to implement a plan to control infiltration and inflow (I/I) to the separate sewer system. The plan shall be updated and submitted to EPA and MassDEP **within six months of the effective date of this permit** (see page 1 of this permit for the effective date) and shall describe the permittee's program for preventing infiltration/inflow related effluent limit violations, and all unauthorized discharges of wastewater, including overflows and by-passes due to excessive infiltration/inflow.

The plan shall include:

- An ongoing program to identify and remove sources of infiltration and inflow. The program shall include the necessary funding level and the source(s) of funding.
- An inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts. Priority should be given to removal of public and private inflow sources that are upstream from, and potentially contribute to, known areas of sewer system backups and/or overflows
- Identification and prioritization of areas that will provide increased aquifer recharge as the result of reduction/elimination of infiltration and inflow to the system.
- An educational public outreach program for all aspects of I/I control, particularly private inflow.

Reporting Requirements:

A summary report of all actions taken to minimize I/I during the previous calendar year shall be submitted to EPA and the MassDEP annually, by March 31. The summary report shall, at a minimum, include:

- A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year.
- Expenditures for any infiltration/inflow related maintenance activities and corrective actions taken during the previous year.
- A map with areas identified for I/I-related investigation/action in the coming year.
- A calculation of the annual average I/I and the maximum month I/I for the reporting year.
- A report of any infiltration/inflow related corrective actions taken as a result of unauthorized discharges reported pursuant to 314 CMR 3.19(20) and reported pursuant to the Part I.B. Unauthorized Discharges section of this permit.

4. Alternate Power Source

In order to maintain compliance with the terms and conditions of this permit, the permittee shall continue to provide an alternative power source with which to sufficiently operate its treatment works (as defined at 40 CFR §122.2).

D. SLUDGE CONDITIONS

1. The permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices and with the CWA Section 405(d) technical standards.
2. The permittee shall comply with the more stringent of either the state or federal (40 CFR part 503), requirements.
3. The requirements and technical standards of 40 CFR Part 503 apply to facilities which perform one or more of the following use or disposal practices.
 - a. Land application - the use of sewage sludge to condition or fertilize the soil
 - b. Surface disposal - the placement of sewage sludge in a sludge only landfill
 - c. Sewage sludge incineration in a sludge only incinerator
4. The 40 CFR Part 503 conditions do not apply to facilities which place sludge within a municipal solid waste landfill. These conditions also do not apply to facilities which do not dispose of sewage sludge during the life of the permit but rather treat the sludge (e.g. lagoons, reed beds), or are otherwise excluded under 40 CFR 503.6.
5. The permittee shall use and comply with the attached compliance guidance document to determine appropriate conditions. See Attachment B, EPA Region 1 NPDES Permit Sludge Compliance Guidance. Appropriate conditions contain the following elements.
 - General requirements
 - Pollutant limitations
 - Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)
 - Management practices
 - Record keeping
 - Monitoring
 - Reporting

Depending upon the quality of material produced by a facility, all conditions may not apply to the facility.

6. The permittee shall monitor the pollutant concentrations, pathogen reduction and vector attraction reduction at the following frequency. This frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year.

less than 290
290 to less than 1500

1/ year
1 /quarter

1500 to less than 15000
15000 +

6 /year
1 /month

7. The permittee shall sample the sewage sludge using the procedures detailed in 40 CFR Part 503.8.
8. The permittee shall submit an annual report containing the information specified in the guidance by February 19. Reports shall be submitted to the address contained in the reporting section of the permit. Sludge monitoring is not required by the permittee when the permittee is not responsible for the ultimate sludge disposal. The permittee must be assured that any third party contractor is in compliance with appropriate regulatory requirements. In such case, the permittee is required only to submit an annual report by February 19 containing the following information:
 - Name and address of contractor responsible for sludge disposal
 - Quantity of sludge in dry metric tons removed from the facility by the sludge contractor

E. MONITORING AND REPORTING

1. For a period of one year from the effective date of the permit, the permittee may either submit monitoring data and other reports to EPA in hard copy form, or report electronically using NetDMR, a web-based tool that allows permittees to electronically submit discharge monitoring reports (DMRs) and other required reports via a secure internet connection. Beginning no later than one year after the effective date of the permit, the permittee shall begin reporting using NetDMR, unless the facility is able to demonstrate a reasonable basis that precludes the use of NetDMR for submitting all DMRs and reports. Specific requirements regarding submittal of data reports in hard copy form and for submittal using NetDMR are described below:

a. Submittal of Reports Using NetDMR

NetDMR is accessed from: <http://www.epa.gov/netdmr>. Within one year of the effective date of the Permit, the permittee shall begin submitting DMRs and reports required under this permit electronically to EPA using NetDMR, unless the facility is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for submitting DMRs and reports ("opt out request").

DMRs shall be submitted electronically to EPA no later than the 15th day of the month following the completed reporting period. All reports required under the permit shall be submitted to EPA, including the MassDEP Monthly Operations and Maintenance Report, as an electronic attachment to the DMR. Once a permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs or other reports to EPA and will no longer be required to submit hard copies of DMRs to MassDEP. However, permittees shall continue to send hard copies of reports other than DMRs (including Monthly Operation and Maintenance Reports) to MassDEP until further notice from MassDEP.

b. Submittal of NetDMR Opt Out Requests

Opt out requests must be submitted in writing to EPA for written approval at least sixty (60) days prior to the date a facility would be required under the Permit to begin using NetDMR. This demonstration shall be valid for twelve (12) months from the date of EPA approval and shall thereupon expire. At such time, DMRs and reports shall be submitted electronically to EPA

unless the permittee submits a renewed opt out request and such request is approved by EPA.
All opt out requests should be sent to the following addresses:

Attn: NetDMR Coordinator
U.S. Environmental Protection Agency, Water Technical Unit
5 Post Office Square, Suite 100 (OES04-1)
Boston, MA 02109-3912

And

Massachusetts Department of Environmental Protection
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608

c. **Submittal of Reports in Hard Copy Form**

Hard copy DMR submittals shall be completed and postmarked no later than the 15th day of the month following the completed reporting period. MassDEP Monthly Operation and Maintenance Reports shall be submitted as an attachment to the DMRs. Signed and dated originals of the DMRs, and all other reports required herein, shall be submitted to the appropriate State addresses and to the EPA address listed below:

U.S. Environmental Protection Agency
Water Technical Unit
5 Post Office Square, Suite 100 (OES04-1)
Boston, MA 02109-3912

The State Agency addresses are:

Massachusetts Department of Environmental Protection
Central Regional Office
Bureau of Resource Protection
627 Main Street
Worcester, Massachusetts 01608

Toxicity reports required by this permit shall also be submitted to the State at:

Massachusetts Department of Environmental Protection
Division of Watershed Management
Surface Water Discharge Permit Program
627 Main Street, 2nd floor
Worcester, MA 01887

F. **STATE PERMIT CONDITIONS**

1. This authorization to discharge includes two separate and independent permit authorizations. The two permit authorizations are (i) a federal National Pollutant Discharge Elimination System permit issued by the U.S. Environmental Protection Agency (EPA) pursuant to the Federal Clean Water Act, 33 U.S.C. §§1251 et seq.; and (ii) an identical state surface water discharge permit issued by the Commissioner of the Massachusetts Department of Environmental Protection

(MassDEP) pursuant to the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53, and 314 C.M.R. 3.00.

All of the requirements contained in this authorization, as well as the standard conditions contained in 314 CMR 3.19, are hereby incorporated by reference into this state surface water discharge permit.

2. This authorization also incorporates the state water quality certification issued by MassDEP under § 401(a) of the Federal Clean Water Act, 40 C.F.R. 124.53, M.G.L. c. 21, § 27 and 314 CMR 3.07. All of the requirements (if any) contained in MassDEP's water quality certification for the permit are hereby incorporated by reference into this state surface water discharge permit as special conditions pursuant to 314 CMR 3.11.
3. Each agency shall have the independent right to enforce the terms and conditions of this permit. Any modification, suspension or revocation of this permit shall be effective only with respect to the agency taking such action, and shall not affect the validity or status of this permit as issued by the other agency, unless and until each agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this permit is declared invalid, illegal or otherwise issued in violation of state law such permit shall remain in full force and effect under federal law as a NPDES Permit issued by the U.S. Environmental Protection Agency. In the event this permit is declared invalid, illegal or otherwise issued in violation of federal law, this permit shall remain in full force and effect under state law as a permit issued by the Commonwealth of Massachusetts.

ATTACHMENT A

FRESHWATER CHRONIC TOXICITY TEST PROCEDURE AND PROTOCOL

USEPA Region 1

Milford Wastewater Treatment Facility (MA0100579)

I. GENERAL REQUIREMENTS

The permittee shall be responsible for the conduct of acceptable chronic (and modified acute) toxicity tests using three fresh samples collected during each test period. The following tests shall be performed as prescribed in Part 1 of the NPDES discharge permit in accordance with the appropriate test protocols described below. (Note: the permittee and testing laboratory should review the applicable permit to determine whether testing of one or both species is required).

● **Daphnid (Ceriodaphnia dubia) Survival and Reproduction Test.**

Chronic and modified acute toxicity data shall be reported as outlined in Section VIII. The chronic fathead minnow and daphnid test data can be used to calculate an LC50 at the end of 48 hours of exposure when both acute (LC50) and chronic (C-NOEC) test endpoints are specified in the permit.

II. METHODS

Methods to follow are those recommended by EPA in: Short Term Methods For Estimating The Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, Fourth Edition, October 2002. United States Environmental Protection Agency. Office of Water, Washington, D.C., EPA 821-R-02-013. The methods are available on-line at <http://www.epa.gov/waterscience/WET/>. Exceptions and clarification are stated herein.

III. SAMPLE COLLECTION AND USE

A total of three fresh samples of effluent and receiving water are required for initiation and subsequent renewals of a freshwater, chronic, toxicity test. The receiving water control sample must be collected immediately upstream of the permitted discharge's zone of influence. Fresh samples are recommended for use on test days 1, 3, and 5. However, provided a total of three samples are used for testing over the test period, an alternate sampling schedule is acceptable. The acceptable holding times until initial use of a sample are 24 and 36 hours for on-site and off-site testing, respectively. A written waiver is required from the regulating authority for any hold time extension. All test samples collected may be used for 24, 48 and 72 hour renewals after initial use. All samples held for use beyond the day of sampling shall be refrigerated and maintained at a temperature range of 0-6° C.

All samples submitted for chemical and physical analyses will be analyzed according to Section VI of this protocol.

Sampling guidance dictates that, where appropriate, aliquots for the analysis required in this protocol shall be split from the samples, containerized and immediately preserved, or analyzed as per 40 CFR Part 136. EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection. Testing for the presence of total residual chlorine (TRC) must be analyzed immediately or as soon as possible, for all effluent samples, prior to WET testing. TRC analysis may be performed on-site or by the toxicity testing laboratory and the samples must be dechlorinated, as necessary, using sodium thiosulfate prior to sample use for toxicity testing.

If any of the renewal samples are of sufficient potency to cause lethality to 50 percent or more of the test organisms in any of the test treatments for either species or, if the test fails to meet its permit limits, then chemical analysis for total metals (originally required for the initial sample only in Section VI) will be required on the renewal sample(s) as well.

IV. DILUTION WATER

Samples of receiving water must be collected from a location in the receiving water body immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location. Avoid collection near areas of obvious road or agricultural runoff, storm sewers or other point source discharges and areas where stagnant conditions exist. EPA strongly urges that screening for toxicity be performed prior to the set up of a full, definitive toxicity test any time there is a question about the test dilution water's ability to achieve test acceptability criteria (TAC) as indicated in Section V of this protocol. The test dilution water control response will be used in the statistical analysis of the toxicity test data. All other control(s) required to be run in the test will be reported as specified in the Discharge Monitoring Report (DMR) Instructions, Attachment F, page 2, Test Results & Permit Limits.

The test dilution water must be used to determine whether the test met the applicable TAC. When receiving water is used for test dilution, an additional control made up of standard laboratory water (0% effluent) is required. This control will be used to verify the health of the test organisms and evaluate to what extent, if any, the receiving water itself is responsible for any toxic response observed.

If dechlorination of a sample by the toxicity testing laboratory is necessary a "sodium thiosulfate" control, representing the concentration of sodium thiosulfate used to adequately dechlorinate the sample prior to toxicity testing, must be included in the test.

If the use of an alternate dilution water (ADW) is authorized, in addition to the ADW test control, the testing laboratory must, for the purpose of monitoring the receiving water, also run a receiving water control.

If the receiving water diluent is found to be, or suspected to be toxic or unreliable an ADW of known quality with hardness similar to that of the receiving water may be substituted. Substitution is species specific meaning that the decision to use ADW is made for each species and is based on the toxic response of that particular species. Substitution to an ADW is authorized in two cases. The first is the case where repeating a test due to toxicity in the site dilution water requires an **immediate decision** for ADW use be made by the permittee and toxicity testing laboratory. The second is in the case where two of the most recent documented incidents of unacceptable site dilution water toxicity requires ADW use in future WET testing.

For the second case, written notification from the permittee requesting ADW use and written authorization from the permit issuing agency(s) is required prior to switching to a long-term use of ADW for the duration of the permit.

Written requests for use of ADW must be mailed with supporting documentation to the following addresses:

Director
Office of Ecosystem Protection (CAA)
U.S. Environmental Protection Agency-Region 1
5 Post Office Square
Boston, MA 02114-2023

and

Manager
Water Technical Unit (SEW)
U.S. Environmental Protection Agency
5 Post Office Square – Suite 100
Mailcode – OES4-SMR
Boston, MA 02114-2023

Note: USEPA Region 1 retains the right to modify any part of the alternate dilution water policy stated in this protocol at any time. Any changes to this policy will be documented in the annual DMR posting.

See the most current annual DMR instructions which can be found on the EPA Region 1 website at <http://www.epa.gov/region1/enforcementandassistance/dmr.html> for further important details on alternate dilution water substitution requests.

V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

Method specific test conditions and TAC are to be followed and adhered to as specified in the method guidance document, EPA 821-R-02-013. If a test does not meet TAC the test must be repeated with fresh samples within 30 days of the initial test completion date.

V.1. Use of Reference Toxicity Testing

Reference toxicity test results and applicable control charts must be included in the toxicity testing report.

If reference toxicity test results fall outside the control limits established by the laboratory for a specific test endpoint, a reason or reasons for this excursion must be evaluated, correction made and reference toxicity tests rerun as necessary.

If a test endpoint value exceeds the control limits at a frequency of more than one out of twenty then causes for the reference toxicity test failure must be examined and if problems are identified corrective action taken. The reference toxicity test must be repeated during the same month in which the exceedance occurred.

If two consecutive reference toxicity tests fall outside control limits, the possible cause(s) for the exceedance must be examined, corrective actions taken and a repeat of the reference toxicity test must take place immediately. Actions taken to resolve the problem must be reported.

V.1.a. Use of Concurrent Reference Toxicity Testing

In the case where concurrent reference toxicity testing is required due to a low frequency of testing with a particular method, if the reference toxicity test results fall slightly outside of laboratory established control limits, but the primary test met the TAC, the results of the primary test will be considered acceptable. However, if the results of the concurrent test fall well outside the established **upper** control limits i.e. ≥ 3 standard deviations for IC25s and LC50 values and \geq two concentration intervals for NOECs or NOAECs, and even though the primary test meets TAC, the primary test will be considered unacceptable and must be repeated.

V.2. For the *C. dubia* test, the determination of TAC and formal statistical analyses must be performed using only the first three broods produced.

V.3. Test treatments must include 5 effluent concentrations and a dilution water control. An additional test treatment, at the permitted effluent concentration (% effluent), is required if it is not included in the dilution series.

VI. CHEMICAL ANALYSIS

As part of each toxicity test's daily renewal procedure, pH, specific conductance, dissolved oxygen (DO) and temperature must be measured at the beginning and end of each 24-hour period in each test treatment and the control(s).

The additional analysis that must be performed under this protocol is as specified and noted in the table below.

<u>Parameter</u>	<u>Effluent</u>	<u>Receiving Water</u>	<u>ML (mg/l)</u>
Hardness ^{1,4}	x	x	0.5
Total Residual Chlorine (TRC) ^{2, 3, 4}	x		0.02
Alkalinity ⁴	x	x	2.0
pH ⁴	x	x	--
Specific Conductance ⁴	x	x	--
Total Solids ⁶	x		--
Total Dissolved Solids ⁶	x		--
Ammonia ⁴	x	x	0.1
Total Organic Carbon ⁶	x	x	0.5
Total Metals ⁵			
Cd	x	x	0.0005
Pb	x	x	0.0005
Cu	x	x	0.003
Zn	x	x	0.005
Ni	x	x	0.005
Al	x	x	0.02
Other as permit requires			

Notes:

1. Hardness may be determined by:
 - APHA Standard Methods for the Examination of Water and Wastewater, 21st Edition
 - Method 2340B (hardness by calculation)
 - Method 2340C (titration)
2. Total Residual Chlorine may be performed using any of the following methods provided the required minimum limit (ML) is met.
 - APHA Standard Methods for the Examination of Water and Wastewater, 21st Edition
 - Method 4500-CL E Low Level Amperometric Titration
 - Method 4500-CL G DPD Colorimetric Method
 - USEPA 1983. Manual of Methods Analysis of Water and Wastes
 - Method 330.5
3. Required to be performed on the sample used for WET testing prior to its use for toxicity testing
4. Analysis is to be performed on samples and/or receiving water, as designated in the table above, from all three sampling events.
5. Analysis is to be performed on the initial sample(s) only unless the situation arises as stated in Section III, paragraph 4
6. Analysis to be performed on initial samples only

VII. TOXICITY TEST DATA ANALYSIS AND REVIEW

A. Test Review

1. Concentration / Response Relationship

A concentration/response relationship evaluation is required for test endpoint determinations from both Hypothesis Testing and Point Estimate techniques. The test report is to include documentation of this evaluation in support of the endpoint values reported. The dose-response review must be performed as required in Section 10.2.6 of EPA-821-R-02-013. Guidance for this review can be found at <http://www.epa.gov/waterscience/WET/guide/index.html>. In most cases, the review will result in one of the following three conclusions: (1) Results are reliable and reportable; (2) Results are anomalous and require explanation; or (3) Results are inconclusive and a retest with fresh samples is required.

2. Test Variability (Test Sensitivity)

This review step is separate from the determination of whether a test meets or does not meet TAC. Within test variability is to be examined for the purpose of evaluating test sensitivity. This evaluation is to be performed for the sub-lethal hypothesis testing endpoints reproduction and growth as required by the permit. The test report is to include documentation of this evaluation to support that the endpoint values reported resulted from a toxicity test of adequate sensitivity. This evaluation must be performed as required in Section 10.2.8 of EPA-821-R-02-013.

To determine the adequacy of test sensitivity, USEPA requires the calculation of test percent minimum significant difference (PMSD) values. In cases where NOEC determinations are made based on a non-parametric technique, calculation of a test PMSD value, for the sole purpose of assessing test sensitivity, shall be calculated using a comparable parametric statistical analysis technique. The calculated test PMSD is then compared to the upper and lower PMSD bounds shown for freshwater tests in Section 10.2.8.3, p. 52, Table 6 of EPA-821-R-02-013. The comparison will yield one of the following determinations.

- The test PMSD exceeds the PMSD upper bound test variability criterion in Table 6, the test results are considered highly variable and the test may not be sensitive enough to determine the presence of toxicity at the permit limit concentration (PLC). If the test results indicate that the discharge is not toxic at the PLC, then the test is considered insufficiently sensitive and must be repeated within 30 days of the initial test completion using fresh samples. If the test results indicate that the discharge is toxic at the PLC, the test is considered acceptable and does not have to be repeated.
- The test PMSD falls below the PMSD lower bound test variability criterion in Table 6, the test is determined to be very sensitive. In order to determine which treatment(s) are statistically significant and which are not, for the purpose of reporting a NOEC, the relative percent difference (RPD) between the control and each treatment must be calculated and compared to the lower PMSD boundary. See *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the NPDES Program*, EPA 833-R-00-003, June 2002, Section 6.4.2. The following link: [Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the NPDES Program](#) can be used to locate the USEPA website containing this document. If the RPD for a treatment falls below the PMSD lower bound, the difference is considered statistically insignificant. If the RPD for a treatment is greater than the PMSD lower bound, then the treatment is considered statistically significant.
- The test PMSD falls within the PMSD upper and lower bounds in Table 6, the sub-lethal test endpoint values shall be reported as is.

B. Statistical Analysis

1. General - Recommended Statistical Analysis Method

Refer to general data analysis flowchart, EPA 821-R-02-013, page 43

For discussion on Hypothesis Testing, refer to EPA 821-R-02-013, Section 9.6

For discussion on Point Estimation Techniques, refer to EPA 821-R-02-013, Section 9.7

2. *Pimephales promelas*

Refer to survival hypothesis testing analysis flowchart, EPA 821-R-02-013, page 79

Refer to survival point estimate techniques flowchart, EPA 821-R-02-013, page 80

Refer to growth data statistical analysis flowchart, EPA 821-R-02-013, page 92

3. *Ceriodaphnia dubia*

Refer to survival data testing flowchart, EPA 821-R-02-013, page 168

Refer to reproduction data testing flowchart, EPA 821-R-02-013, page 173

VIII. TOXICITY TEST REPORTING

A report of results must include the following:

- Test summary sheets (2007 DMR Attachment F) which includes:
 - Facility name
 - NPDES permit number
 - Outfall number
 - Sample type
 - Sampling method
 - Effluent TRC concentration
 - Dilution water used
 - Receiving water name and sampling location
 - Test type and species
 - Test start date
 - Effluent concentrations tested (%) and permit limit concentration
 - Applicable reference toxicity test date and whether acceptable or not
 - Age, age range and source of test organisms used for testing
 - Results of TAC review for all applicable controls
 - Test sensitivity evaluation results (test PMSD for growth and reproduction)
 - Permit limit and toxicity test results
 - Summary of test sensitivity and concentration response evaluation

In addition to the summary sheets the report must include:

- A brief description of sample collection procedures
- Chain of custody documentation including names of individuals collecting samples, times and dates of sample collection, sample locations, requested analysis and lab receipt with time and date received, lab receipt personnel and condition of samples upon receipt at the lab(s)
- Reference toxicity test control charts
- All sample chemical/physical data generated, including minimum limits (MLs) and analytical methods used
- All toxicity test raw data including daily ambient test conditions, toxicity test chemistry, sample dechlorination details as necessary, bench sheets and statistical analysis
- A discussion of any deviations from test conditions
- Any further discussion of reported test results, statistical analysis and concentration-response relationship and test sensitivity review per species per endpoint

Exhibit

B



TATA & HOWARD
Water and Wastewater Consultants

**RIDER TO AGREEMENT BETWEEN MILFORD POWER LIMITED PARTNERSHIP
AND THE TOWN OF MILFORD ACTING THROUGH THE MILFORD SEWER
COMMISSIONERS AND THE MILFORD BOARD OF SELECTMEN
DATED JULY 31, 1991**

EXHIBIT B

Impact Monitoring and Mitigation Plan

In accordance with No. 6 on the Rider to Agreement Between MPLP and the Town of Milford, the MPLP shall be responsible to perform the monitoring and mitigation plan set forth below and in accordance with the directives of the Department of Environmental Protection (the "Department"). All monitoring shall be performed in accordance with a Quality Assurance Project Plan ("QAPP"), which has been approved by the Department as required in Section 1.2 of this attachment.

1.0 Introduction

The Impact Monitoring and Mitigation Plan (the "Plan") will continue to track hydrologic conditions in the Charles River in the vicinity of the Milford Wastewater Treatment Plant ("MWWTP") while treated wastewater is diverted for use at the Milford Power Limited Partnership ("MPLP") Facility. The plan will act as a compliance and enforcement tool to insure that a flow rate of 3.0 cubic feet per second (cfs), is maintained in the Charles River immediately downstream of the MWWTP and that appropriate mitigation measures are implemented immediately if impacts are identified. The monitoring component of the plan shall be conducted for the period of time set forth in Section 2.0 within the study area defined in Section 1.1. The monitoring plan itself and the mitigation plan is set forth in Section 1.2

1.1 Stream-flow Monitoring

A secured river stage monitoring station shall be maintained upstream of the South Howard Street crossing of the Charles River. The monitoring station shall include a river level stage sensor with continual data recorder (Stevens Type F or equivalent) placed in a stilling well that is hydraulically connected to the stream's low flow channel. The stage-discharge relationship that has been developed at this location shall be checked for accuracy monthly as set forth in the Quality Assurance and Control Plan. This will allow for the conversion of measured river stage to river discharge rate. Data developed by the stream gage will be used to: 1) monitor compliance with the effluent diversion threshold of 3.06 cfs downstream of MWWTP; 2) facilitate the implementation of the low river flow response and mitigation plan; and 3) develop statistics of river discharge. Quality Assurance/Quality Control verification flow measurements must be obtained at an approved USGS gage with established and stable ratings every two years in order to evaluate the accuracy of equipment and measurement technique employed as part of this plan.

The river stage monitoring station has been active at the railroad crossing of the Charles River immediately downstream of the MWWTP in Hopedale, MA. A staff gage has been installed on the railroad bridge and the zero point of flow has been consistently surveyed at a point under the bridge or immediately downstream of the bridge. A still well is installed on the western bank of the river with a hydraulic connection to the river in a relatively deep pool located upstream of the railroad bridge. This location will continue to serve as the river stage and stream flow monitoring location.

1.2 Quality Assurance and Control Plan (QACP)

All monitoring, analysis, and reporting shall be conducted in accordance with a Quality Assurance and Control Plan approved by the Department. The QACP will incorporate Charles River Low Flow Response Plan provisions. The Charles River Low Flow Response Plan describes the operational adjustments and mitigation measures which will be employed in the event that the river level stage sensor indicates that the river flow rate downstream of the MWWTP is approaching 3.06 cfs. This Charles River Low Flow Response Plan shall ensure that the diversion of MWWTP effluent shall cease prior to the river flow rate downstream of the MWWTP reaching 3.06 cfs.

2.0 Duration of Impact Monitoring and Mitigation Plan

The monitoring required pursuant to this permit shall be conducted for the duration of the MWWTP Water Re-use permit. Monitoring may be extended, altered or decreased, by modification or renewal of the MWWTP Water Re-use permit.

The MPLP shall immediately cease using diverted MWWTP effluent upon receipt of written notification that the Department has determined that an adverse impact on water quality, aquatic biota, or riverine wetlands is occurring in or near the river as a result of the diversion. Determinations of adverse impacts and causation thereof pursuant to this section may be made by the Department on its own initiative or in consultation with a third party environmental consulting firm or in discussion with MPLP.

3.0 Data Reporting and Availability

All data collected by the MPLP shall be sent to the Department and the MWWTP in accordance with the following schedule:

- Stream-flow Monitoring – by the 15th of the month, for previous months' data. Data will be transmitted electronically in a form agreed upon between the Department and MPLP as described in the Quality Assurance Control Plan.

- Steam Gage Confirmation Measurements – annually, on or before March 1st for the previous year's data

All data and the annual report shall be sent to the Department's Central Region Office Bureau of Waste Prevention and the MWWTP.

4.0 Enforceability

The conditions and requirements set forth above are hereby determined to be Special Conditions of this permit and are hereby incorporated into this permit as enforceable conditions and restrictions. Non-compliance therewith is actionable by the Department as a violation of this permit.

Exhibit

C



TATA & HOWARD
Water and Wastewater Consultants

TOWN OF MILFORD, MASSACHUSETTS
ZONING BOARD OF APPEALS

TOWN HALL
52 MAIN STREET
MILFORD, MASSACHUSETTS 01757

(508) 834-2302

DECISION

This is the petition of Enron Power Corporation and Milford Power Limited Partnership, 70 Walnut Street, Wellesley, MA for a Special Permit pursuant to Section 2.3 of the Zoning By-Law. Said Special Permit is sought to allow the establishment of an industrial gas fueled power plant on a parcel of land located on the northerly side of the terminus of National Street, which parcel is currently owned by Howard A. Fafard.

Upon receipt of the above petition, a public hearing was scheduled thereon for Thursday, March 28, 1991 in the Meeting Room of the Upper Town Hall, 52 Main Street, Milford, MA at 7:20 P.M. Notice of the time, place and subject matter of the petition was given, as required by law.

The matter came on for hearing at the time and place thereof. Present were Chairman Andrej Thomas Starkis, members William J. Balmelli, Fernando Rodrigues, Jonathan M. Bruce and Edward H.P. Barnhill and alternate members John Speroni, Jr. and Anthony Consigli. The alternate members participated in the public hearing but not in the deliberations or vote. The petitioners were represented by Attorney John Fernandes, Jude Rolfes, Vice-President of Enron Power Corporation (EPC) and numerous other employees and consultants who presented evidence in favor of the petition. Also present were numerous residents of the area of Town at issue, organized by Lena McCarthy and Margaret Knowlton, who presented evidence against the petition. Also represented were representatives of interested environmental organizations and officials of the Town of Milford, including the Board of Selectmen and their consultant, Dr. Alfred Scaramelli. During the course of the hearing, it being apparent that several nights of hearing would be necessary, the petitioner and the Board agreed in writing to extend the time for hearing and decision first to May 15, 1991 and later to June 1, 1991. The hearing continued until approximately midnight on March 28, 1991 whereupon it was continued by unanimous vote to 7:00 P.M. on April 2, 1991 at the same location. The hearing continued until approximately midnight again whereupon it was unanimously voted to continue it yet again until 7:00 P.M. on April 9, 1991 at the same location and at that meeting, after some four hours of testimony, there was another unanimous vote to continue until 7:00 P.M. on April 30, 1991 at the same location. Once again, after some four hours of hearing evidence, the Board unanimously voted to continue the matter until 7:00 P.M. on May 2, 1991 at the same location. At this hearing, after another four hours of evidence,

Enron Power Corporation and Milford
Power Limited Partnership

the Board unanimously voted to close the public hearing and took the matter under advisement. At this time, the Board began deliberations. At all of the foregoing continued meetings all of the regular members and the two alternate members listed above were present. After deliberation, the five regular members of the Board unanimously voted to grant the Special Permit subject to the numerous conditions set forth below. In so voting, the Board based its decision upon the following findings:

1. The petitioners propose to build an approximately 140 megawatt natural gas fueled independent power production facility on a 6.87 acre, more or less, parcel of land owned by Howard A. Fafard at the end of National Street in Milford. The site is zoned Highway Industrial (IB) and is located right next to a heavy industrial plant commonly known as Foster Forbes Glass. The Facility will have one single one hundred ten (110) MW Westinghouse gas turbine generator in combined cycle with the nominal 40 MW steam turbine generator. The project will be supplied natural gas on a firm year round basis by Distrigas, a Massachusetts Corporation, and year round transportation will be available from Commonwealth Gas Company and Algonquin Gas Transmission Company.

2. The site of the proposed Facility is presently utilized in part for a parking lot for 30-35 trailers. All of the primary buildings, storage tanks, and ancillary structures of the Facility will be situated on site.

The site is easily accessible to all necessary utilities. An existing New England Power Company 115 kV overhead transmission line is situated approximately 1,000 feet to the north. There is a 12 inch water main located in National Street and an Algonquin Gas Transmission Company pipeline is located along railroad tracks which are adjacent to the site. The Milford Wastewater Treatment Plant (MWTP) is situated one-half mile to the south in the Town of Hopedale. Effluent from MWTP will serve as cooling water for the project and will be routed in a common right of way with a Milford Sewer Commission sewer line to be constructed in a northerly direction from the MWTP.

DECISION

Enron Power Corporation and Milford
Power Limited Partnership

3. In determining whether or not to grant the Special Permit, this Board must be guided by the standards set forth within Section 1.10.1 of the By-Law. Subsections (a) and (b) are fairly clearly met. Town Meeting last year specifically amended the Zoning By-Law to allow the proposed use by Special Permit. No standards were set other than those within Section 1.10. The proposed use, therefore, is clearly in harmony with the general purpose and intent of the By-Law and the Special Permit, with the conditions imposed below clearly conforms to applicable general and specific provisions of the By-Law.
4. The standard within Section 1.10.1(c) is also clearly met. During operation, the number of employees and visitors is low relative to uses otherwise permitted as of right to locate on the site. The impacts on traffic will be negligible. Fuel will come to the site by pipeline. Operationally, the use will have less of a traffic impact than many uses allowed as of right. Traffic impacts may be greater during construction, but even then the impacts will be less than for other uses because substantial construction material delivery will be by rail.
5. As all agreed at the hearing, the key considerations are within Section 1.10.1(d) and they are the questions of whether or not the proposed Facility will cause substantial harm to the neighborhood or create a nuisance or hazard affecting the health, safety or general welfare of the citizens of the Town of Milford. For the reasons discussed below, and with the conditions attached to this grant, the Board concluded the standard within Section 1.10.1(d) is met.
6. The primary issues raised at the hearing were issues of air quality impacts, noise, wastewater use impacts, impacts upon water supply and nearby well fields, electric

DECISION

Enron Power Corporation and Milford
Power Limited Partnership

and magnetic effect, and affect upon the Charles River and upon an underlying aquifer. The Board heard many hours of testimony on each of those concerns and took in evidence literally thousands of pages of documentary evidence on each side of these issues. In the final analysis, the Board relied most heavily upon the testimonial and documentary submissions of certain employees of ENSR Consulting and Engineering, retained by Enron. Those included Fred Sellars on air and sound impacts and methods and means of reducing same; Mark Gerath, Senior Hydrologist in relation to effects upon the water supply, the aquifer and the Charles River. Dr. Mary Best, Senior Biologist and Dr. Bruce Fishman, Bacteriologist on the use of effluent. Also relied upon were Dr. Peter Valberg of the Harvard School of Public Health on electromagnetic fields (EMF) and James Kemp, Vice-President of Plant Start-Up & Operations for Enron as to problems and solutions in start-up and operation of the plant. Finally, the Board relied upon the detailed environmental review and recommendations of Dr. Alfred Scaramelli of Bay State Power Associates, the environmental engineer retained by the Town. Also relied upon heavily, but not exclusively, was the Draft Environmental Impact Report dated January 1991, and the accompanying documentation.

7. In the final analysis, the Board concluded that although the issues set forth above and others raised are very real issues, the petitioner had done much to address those issues and minimize impacts upon the neighborhood and the Town. The Selectmen, through Dr. Scaramelli, suggested even more strenuous environmental standards and methods of testing compliance. (many of which are adopted below). Noise will be controlled by fencing with acoustical barriers and sound insulated enclosures around the gas turbine and location of facilities to minimize noise, among other protection, and will have to meet stringent noise level requirements. To minimize effects upon air quality only one stack is allowed and by-pass stacks are not permitted. Additionally the Facility

DECISION

Euron Power Corporation and Milford
Power Limited Partnership

will have a continuous emission monitoring system utilizing Selective Catalytic Reduction as oxides of nitrogen control technology and significant reporting obligations. The wastewater utilized will come from Milford's state of the art tertiary treatment plant and will therefore be low in contaminants. Cooling tower drift rate will be minimal and controlled and there will be significant testing for any effects upon groundwater and the environment. The Godfrey Brook wellfield will be further protected by a testing program to evaluate groundwater flow and water quality in and around the site and the wellfield, among other protections. Concerns about electromagnetic fields are minimized considering the location of the site relatively far from existing or possible future residences. Diversion of part of the wastewater flow from the Sewer Treatment Plant from the Charles River to the proposed Facility will be controlled and measured so as to have no adverse impact upon the flow of the Charles River.

8. With the numerous and significant conditions below, and based upon the submission of the petitioner and the testimony of the many experts and other witnesses, it is the conclusion of the Board that the grant of the Special Permit, with those conditions, and the operation of the proposed power plant under those conditions, will not cause harm to the neighborhood and will not create any nuisance or hazard affecting the health, safety or general welfare of the citizens of the Town of Milford.

Having made the above findings, the Board voted unanimously as set forth above, to grant the Special Permit requested, subject to the following conditions and requirements, all of which are to be considered to be binding upon the petitioners and/or their respective successors and assigns:

1. The Company shall retain existing mature trees along the site perimeter and comply with the Company proposed Landscape Plan attached as Exhibit C to the "Report" dated January, 1991, on file herewith (hereafter referred to as "the Report"). The Company shall also, in accordance with the Variance granted concurrent herewith, construct a ten (10) foot high wooden fence (with acoustical control panels) along the cemetery property line and the property line running in a northerly direction up to the Penn Central Right of Way, which fence shall be on top of a three foot earth berm. (If said Variances does not stand, the wooden fence shall be six feet high). The balance of the property shall be enclosed by at least a six foot high chain link fence. If there is a driveway behind said wooden fence running to property owned by others, there shall be a separate six foot high chain link fence separating said driveway from the Facility. The proposed tree and shrub plantings along the cemetery boundary line shall be between the wooden fence and the cemetery. From time to time, the Company shall replace any dying or severely damaged trees or shrubs on the property.
2. Provide sound insulated enclosures around the gas turbine, the section between the gas turbine and heat recovery steam generator, steam turbine generator, and the natural gas pressure reducing and metering station (either on site or off site).
3. Minimize nighttime lighting to that necessary for safe operation of the Facility. Maximize the use of spot light and minimize area lighting. Use of sodium lamps shall not be allowed.
4. At the point in time when the Facility is deemed to have operated for its useful life and the Company has determined it is no longer prudent to staff and maintain the Facility, the Company shall cause the Facility to be demolished and the land returned to a clean, graded and seeded condition.

Prior to issuance of a Building Permit to the Company, the Company and the Town shall enter into a Demolition Fund Escrow Agreement whereby both parties agree that within 15 days after the date of issuance of the Building Permit, and on the same day each year thereafter for a period of 20 years, the Company shall deposit \$15,000 into an interest bearing escrow account in a Massachusetts bank.

If the Company promptly complies with the above Facility demolition obligation at the end of the Facility's useful life, the balance in the escrow account, including all accrued interest, shall be released to the Company upon successful demolition and land restoration as determined by the Board of Selectmen. In the event the Company does not commence compliance with the above-described demolition and restoration within sixty (60) days after receipt of written notice from the Board of Selectmen to commence, all monies in the escrow account, including accrued interest, shall be released to the account of the Town to be utilized by the Town for demolition and restoration. Any balance remaining after such demolition and restoration by the Town shall be retained by the Town for its general purposes.

5. The Company shall maintain the Facility site and any utility easement routes in a clean and orderly condition, and shall routinely perform landscape care and Facility painting, and shall keep the site generally free of litter.
6. Once in commercial operation, construction related facilities and equipment shall be removed from the site as quickly as practically possible.
7. Stack lighting or marking requirements shall be no more than that required by the FAA.
8. Location of the steam turbine, gas turbine, HRSG, cooling towers and switching yard on the site shall be substantially similar to those locations shown on Exhibit B, to the Report, except as may be modified as a result of Town Engineer approval. Location of all equipment and structures must comply with Town approved operational and safety procedures as described herein.
9. The Company shall design and construct the cooling towers such that air cooled heat exchange coils (steam or hot water) will be added to the cooling tower as plume abatement equipment within a reasonable time after written notice from the Board of Selectmen (received within the first two years of commercial operation) that they have determined that the cooling tower plume causes a significant aesthetic impact in at least one area of Town.

10. During construction of the Facility, National Street shall be swept or washed two times per week to control mud and dust, and more frequently if so directed by the Highway Surveyor.
11. The Company shall provide up to \$15,000 in off-site landscape planting and services within Precinct Three of the Town with such off-site landscaping scope of work to be determined by the Planning Board prior to commercial operation of the Facility.
12. Natural gas shall be the only gas turbine fuel burned or stored on the site.
13. The Facility shall contain only one flue gas exhaust stack which shall be connected to the exit of the heat recovery steam generator. There shall be no by-pass stacks. The Company shall use all reasonable efforts to obtain a waiver from the Massachusetts Department of Environmental Protection Division of Air Quality (DEP) to allow a stack height of approximately 104 feet. However, if a waiver cannot be obtained, the height of the chimney or flue gas exhaust stack for the emissions of combustion products at the site shall not exceed the minimum acceptable stack height required for the project by DEP, such height not to exceed 165 feet.
14. The cooling tower shall have a maximum drift rate of 0.005 percent of the water recirculation rate. The Company shall submit cooling tower specifications to the Town Engineer that state, at a minimum, drift rate percentage, drift particle size distribution, and drift rate prior to construction of the cooling tower, and shall certify to the Town Engineer that the drift eliminator installed by the Company complies with these specifications. The Company shall submit to a test and measurement of the drift rate from time to time if in the Town Engineer's opinion there is reasonable cause to believe that drift rate is exceeding guaranteed values or causing an adverse impact.
15. Prior to issuance of a Building Permit, the Company, in cooperation and agreement with the Milford Water Company, shall prepare and submit a plan for review, modification and approval, which approval shall not be unreasonably withheld, to the Health Agent that specifies a testing program and procedure to evaluate groundwater flow, soil and water quality in and

around Godfrey Brook wellfield prior to construction and during operation of the Facility. The test program shall address limits of Zone 2, location and type of sampling stations on the Company's property and off-site if available, frequency of sampling, sampling procedures, components to be tested, test methods and reporting results. Submittal of this plan shall be within 60 days of issuance of this Special Permit.

16. No obnoxious or offensive odors from the Facility shall be reasonably detectable beyond the Facility property line. Any odor related complaints shall be promptly investigated by the Company. The nature of the complaint, status of the investigations, and resolution shall be reported in writing to the Health Agent within seven days of a complaint, and corrective action taken as appropriate.
17. The Company shall install and operate Selective Catalytic Reduction as oxides of nitrogen control technology.
18. The Company shall make a one time contribution of \$5,000 prior to the start of commercial operations of the Facility to the Massachusetts Re-Leaf program which is a tree seedling planting program for reduction in carbon dioxide.
19. The Facility shall be equipped with a continuous emission monitoring (CEM) system in accordance with Massachusetts DEP requirements.
20. The Company shall submit quarterly reports to the Board of Selectmen once the Facility is operational on the air emissions from the Facility and the meteorology at the site. Such reports shall include all data and information filed with the Massachusetts DEP during the quarter and any additional data as may be appropriate based upon operating circumstance. A comprehensive summary of plant operation and emissions performance during the quarter including CEM results shall also be provided.
21. The Company shall maintain a properly located and calibrated meteorological data collection and recording station, recording at least wind speed, wind direction and temperature. Meteorological

data and Facility operating logs shall be made available to the Health Agent for use in investigating any complaints related to the Facility.

22. The Company shall actively pursue participation in utility sponsored energy conservation programs, e.g. demand side management, and shall annually for a five year period provide the Board of Selectmen with a written report on the Company's efforts in this area.
23. The Company shall install and maintain the noise control equipment and treatments as set forth below by the Company during startup and operation of the Facility. Noise abatement features as proposed by the Company shall include at least the following:

A building surrounding the gas turbine and steam turbine of sound absorbing perforated sandwich-panel type construction.

Gas turbine air inlet will be lined with sound abatement material and equipped with deflector baffles over the inlet filters and modified wet filter media.

Piping sized for reduced velocity and insulated where required.

Silencers and mufflers on all main emergency and bypass vents.

High efficiency motors and transformers.

In addition, the Plant layout shall be sized to optimize shielding. For example, the cooling tower is proposed to be located in the rear of the plant and the water tanks are on the outside to shield noise.

A low noise cooling tower has been selected with additional sound abatement.

Internal acoustical treatment for the HRSG stack.

24. During startup or at any other applicable times, the Company shall provide at least 48 hours notice to the

Town Engineer, Health Agent, local radio and newspapers, of any planned major steam venting. All major steam vents shall be equipped with silencers, and the Company shall undertake any other measures for silencing as may be required by the Town Engineer.

25. The Facility shall be designed and constructed with a condenser system to condense steam in the event of a steam turbine trip or outage. Steam venting to the atmosphere shall only be permitted during emergency conditions and initial boiler boilout and steam pipe cleaning during construction start-up.
26. During commercial operation of the Facility, Facility related noise shall not result in a measured increase in L90 ambient noise level of more than 4 dBA at any time, day or night, at Receptors No. 2,3 and 4, as shown on Exhibit A. Prior to issuance of a Building Permit for the Facility, the Company shall submit a plan for review, modification and approval, which approval shall not be unreasonably withheld, to the Town Engineer which specifies the testing protocol, measurement equipment, frequency and conditions for testing the Facility during the period of commercial operations to demonstrate compliance with the 4 dBA noise increase requirement. Ambient noise levels shall be established prior to issuance of a Building Permit. In addition, operation of the Facility shall not exceed tonal noise requirements as defined by the Massachusetts DEP. Submittal of this plan shall be within 60 days of issuance of this Special Permit.
- ✓ 27. The Company shall use all reasonable efforts to minimize noise during construction, startup and acceptance testing. The Town Engineer and Director of Health shall be notified at least 48 hours prior to any blasting.
28. Construction activity, including startup of equipment, shall be limited to the hours of 6:30 A.M. to 6:00 P.M. Monday through Saturday, excluding Federal holidays, except that light construction activities, not involving use of heavy equipment shall not be so restricted.
29. Rail or truck deliveries to the Facility site shall be limited to the hours of 7:00 A.M. to 6:00 P.M. Monday through Saturday, excluding Federal holidays.

The Company shall use all reasonable efforts to control truck delivery routes to the Facility such that all non-local area originating truck deliveries using Route 495 shall, if travelling south on Route 495, exit at the Route 85 exit and proceed to Route 16; all trucks travelling north on Route 495 shall exit at Route 109 and proceed to Route 16. Thereafter, all trucks shall follow Route 16 to Beach Street to Central Street, Depot Street, and then to National Street. The Town Engineer shall have the right to alter truck delivery routes from time to time. The Company shall also provide a safety guard (individual) at each non-gate activated railroad crossing in Milford to assist in vehicle and pedestrian traffic protection whenever the Company is receiving deliveries to the Facility by rail.

30. Prior to the issuance of a Building Permit for the Facility, the Company shall submit a plan containing testing procedures and the maximum concentrations of various compounds in the cooling water that will be considered acceptable for use in the cooling tower to the Town Engineer and Health Agent for review, modification and approval, which approval shall not be unreasonably withheld. Submittal of this plan shall be within 45 days of issuance of this Special Permit.
31. The Company shall maintain adequate disinfection treatment levels in the cooling water pipeline from the WWTP to the Facility as well as in the cooling tower basin. If chlorine is used as the disinfectant, it shall be purchased in the liquified form as a hypochlorite. The Company shall regularly test cooling tower water for the presence of fecal coliform and other constituents as described above, and make these test results available to the Health Agent, and to the Sewer Commissioners upon their request. A testing schedule will be as agreed upon with the Health Agent and the Town Engineer.
32. In the event of a total cooling tower shutdown exceeding four hours in length, the cooling tower basin shall be drained of cooling water with all drained wastewater discharged to the sewer, and

the cooling water in the pipeline shall be purged with potable water.

33. The Company shall use stainless steel tubing and piping in the condenser and cooling tower in lieu of copper tubing and piping, and such stainless steel tubing shall have minimal chromium content as consistent with good engineering practice.
34. The Company shall construct a potable water storage tank on the site with a capacity not to exceed 1,000,000 gallons which shall be designed to provide an alternative make-up water source to the cooling tower and boiler feedwater system. Only potable shall be stored in this tank. Said maximum gallonage may be stored in two (2) tanks if deemed appropriate by the Company.
35. Prior to issuance of a Building Permit, the Company shall submit a Stormwater Control and Discharge Plan to the Town Engineer, which plan shall protect the water supply sources of the Milford Water Company during construction and operation of the Facility, and such plan shall have prior approval from the Milford Water Company, and shall also provide for on-site groundwater monitoring wells at selected locations along the Company's property line to monitor stormwater detention basin leaks and chemical spills. Such plan shall be submitted within 90 days of issuance of this Special Permit.
36. The Company shall install and continuously record Charles River flow at a point within 200 feet below the discharge point of the Milford Wastewater Treatment Plant. The Company shall be allowed to use Milford wastewater effluent to the extent that measured river flow is equal to or greater than 3 cubic feet per second or such river low flow limit as established by appropriate Massachusetts regulatory agencies specifically for the Company's Facility, whichever river flow is greater. The Company shall reduce wastewater use, if necessary, to achieve the above minimum river flow requirements. The aforesaid point of flow measurement may be at a point greater than 200 feet below said discharge point if agreed to by the Town Engineer.

37. The Company shall continuously record wastewater usage and make available to the Sewer Commissioners wastewater usage and river flow data upon request.
38. The Company shall comply with all applicable industrial wastewater pre-treatment requirements prior to discharge to the Town sewer. All Facility wastewater, except sanitary waste, shall be piped to a wastewater treatment and holding tank prior to sewer discharge. The Company shall monitor Facility wastewater effluent flow and quality to the wastewater treatment and holding tank and shall test for such constituents and parameters as required by the Sewer Commissioner from time to time. In the event the wastewater does not meet pre-treatment requirements, it shall not be discharged to the sewer.
39. Prior to issuance of a Building Permit, the Company shall submit a comprehensive Spill Prevention, Containment and Control Plan for the Facility to the Town Fire Chief. Such plan shall be approved by the Milford Water Company and, at a minimum, shall contain a list of all chemicals to be used and stored at the Facility, including estimated quantities, a requirement to notify the Water Company and Fire Chief of any change in chemicals, design measures to prevent chemical spills, procedures to respond to a spill or Facility emergency, location and type of on-site fire fighting or spill control equipment, and any special techniques or requirements for dealing with fires or spills associated with individual chemicals. Such plan shall deal with both Facility construction and operation and shall be submitted within 120 days of issuance of this Special Permit.
40. Prior to issuance of a Building Permit, the Company shall submit an Emergency Response Plan to the Fire Chief. Such plan shall be submitted within 120 days of issuance of this Special Permit. The plan shall be updated by the Company on a yearly basis and more frequently as required by the Fire Chief.
41. Prior to issuance of a Building Permit, the Company shall submit a Facility construction and operation plan to the Milford Water Company and the Town

Engineer for review, modification and approval, which approval shall not be unreasonably withheld, describing general construction and operating procedures, erosion and sedimentation control techniques, fuel use and handling, handling of cleaning and degreasing chemicals, and subsurface construction techniques.

42. The Company shall employ automatic gas detection circuitry to locate in order to immediately respond to any gas leak involving the fuel gas building and gas turbine area.
43. If the Company uses hydrogen gases to cool the electrical generator driven by the gas turbine and/or steam turbine, the hydrogen gas shall be stored in permanently mounted horizontal cylinders with bollard protection. No more than 370 cubic feet of cylinder volume shall be installed at the site. The use, storage and unloading of hydrogen gas shall be in compliance with all applicable state and local fire safety requirements.
44. No underground storage of chemicals or liquids shall be allowed on the Facility site.
45. Except as provided below, the Company shall surround all outside chemical storage tanks with concrete dikes capable of holding at least 110 percent of the tank capacity with floor drains, if any, not to be connected to the Facility's wastewater discharge system. Ammonia and chlorine used at the Facility shall be delivered, stored and used in aqueous form. All chemical storage areas inside buildings, tanks for storage of cooling tower and boiler water conditioning chemicals and truck unloading areas shall be provided with curbing and drains, and such drains shall connect to a wastewater holding and treatment tank prior to sewer discharge.
46. None of the Special Permit conditions are in lieu of any approvals, permits or licenses that the Company must obtain for construction and operation of the Facility.
47. In the event that any one or more of the conditions contained in this Special Permit shall be invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions contained herein shall not in any way be affected or impaired.

48. Elected or appointed Town officials or designated Town representatives shall have the right to visit the Facility during normal business hours with reasonable notice to the Company. However, this provision does not restrict the right of any appropriate Town Board or Town entity to enter the Facility at any time, without notice, to perform its designated responsibilities and obligations in its normal course of duty, although upon such entry all Town officials and/or representatives shall be subject to Facility safety requirements and procedures. All such requirements and procedures, with all updates thereof, shall be promptly provided to the Building Commissioner, Fire Chief, Police Chief, and Health Agent.
49. The Company shall have the right to assign this Special Permit to any entity solely for the purpose of financing or refinancing the Facility, furthermore, the Company shall have the right to assign the Special Permit to another entity provided that such entity has demonstrated successful technical and operational experience and financial capability to undertake the obligations of this Special Permit. Such demonstration shall be to the Special Permit Granting Authority which shall indicate its agreement or disagreement by majority vote.
50. The Company shall provide quarterly written status reports to the Board of Selectmen. These reports are intended to provide a status summary of Facility construction, operations, permit compliance, unusual incidents, citizen complaints and resolution, and other matters. The content and format shall be as agreed to by the Board of Selectmen.
51. An annual written report shall be provided to the Board of Selectmen. The Company shall present the results of the report at a public meeting scheduled by the Board of Selectmen. Copies of this annual report shall be furnished to any Milford resident making written request for same.
52. The Company shall make an immediate report of any significant incident at the Facility to the Health Agent and the Board of Selectmen.

53. A responsible Facility official will be designated as the operation's community contact. This individual will be responsible for responding to and resolving citizen complaints and inquiries.
54. In consideration for the environmental plans and procedures that must be reviewed and approved by the Town prior to issuance of a Building Permit, the Special Permit compliance testing requirements that must be demonstrated to the Town at the start of commercial operations and the technical and environmental reviews by the Town during the Facility operations period, the Company shall pay to the Town an environmental compliance review fee of \$25,000 beginning 30 days after issuance of this Special Permit and to pay such amount each anniversary date thereafter throughout the development, construction and acceptance testing of the Facility equal to the previous year's payment plus five percent. Such annual increase is in lieu of any inflation adjustment.

Once the Facility has commenced commercial operations, the Company shall only be obligated to pay actual reasonable expenses incurred by the Town for such environmental reviews as described herein, up to an amount of \$30,000 for the first year of facility operation and increasing by five percent per year each yearly anniversary thereafter.

55. In the event the Company is deemed to be in violation of a condition of this Special Permit, the Town shall so notify the Company in writing. The Company shall have 7 days from receipt of such notice to commence action to correct such violation or to make a retest related to such violation. If within 30 days of such notice the Company has corrected such violation or has undertaken such corrective action which by the nature of such action reasonably requires more than 30 days to complete using all reasonable efforts, or has completed such retesting to demonstrate that the Facility is then in compliance with this Special Permit, then the Company is deemed to be in compliance with this Special Permit. If, however, within 30 days of such notice the Company fails to correct the violation, or to retest and demonstrate compliance with this Special Permit, or to use all reasonable efforts to correct the violation(s)

within this time period, which may reasonably extend beyond this time period, then the Company shall be deemed to be in violation of this Special Permit and subject to any remedies at law or equity by the Town.

Further, in the event of civil and/or criminal proceedings brought by the Town to obtain compliance and/or to punish for violation, if the Town prevails as to any issue, the Company will reimburse the Town for all of its reasonable costs and expenses, including attorney, consultants, and witness fees. Failure to so reimburse will entitle the Town to order cessation of operations at the Facility.

In the event that the Town reasonably deems that compliance with the time frames above will endanger the health or safety of the public or any abutters, the Town shall have all of its usual rights under applicable law to take immediate action to obtain compliance.

56. Within all of the foregoing conditions, whenever it is indicated that the "approval" or "acceptance" of any Town employee, official, board or agency is required, the requirement for such "approval" or "acceptance" shall be deemed to be followed by the phrase, "which shall not be unreasonably withheld," and further, whenever the Town, or an employee, official, board of agency is permitted to require some test or testing procedure, such shall be deemed to be fairly and reasonably required.

MILEFORD ZONING BOARD OF APPEALS

Andrej Thomas Starkis
Andrej Thomas Starkis, Chairman

May 15, 1991

EXHIBIT A



Source: U.S.G.S. 7.5 X 15 Minute Series (Topographic Quads) of
Milford, MA 1962 - Medfield, MA 1967 -
Uxbridge, MA 1962 - Franklin, MA 1967

FIGURE 3.1.6-7
Noise Measurement Locations in the Vicinity
of the Proposed National Street Site - Milford, MA

Exhibit C

Reuse Management Plan

Reuse Management Plan
Reclaimed Water Use Permit: BRP WP 84 - #X231699
Milford Wastewater Treatment Facility
Milford, Massachusetts

The reclaimed water system at the Milford Power Limited Partnership (MPLP) power generation facility is the only reuse site associated with the Milford Wastewater Treatment Facility (WWTF). Please find the requirements of the Reuse Management Plan in italics with associated responses.

1. Description of volume of water:

On July 31, 1991, the MPLP and the Town of Milford Board of Sewer Commissioners entered into an agreement that allowed MPLP to purchase up to 1.5 million gallons per day (MGD) of effluent wastewater from the WWTF for use as cooling water at the MPLP power generation facility.

2. Classification of water:

The reclaimed water used as cooling water at the MPLP power generation facility in Milford, Massachusetts, is subject under the provisions of 314 CMR 20.03(6)(b).

3. Description of reclaimed water distribution system:

Prior to distribution to MPLP power generation facility, the wastewater travels through ultraviolet (UV) disinfection and is treated with chlorine. Two (2) 900 gallon per minute (gpm) duplex pumps distribute the WWTF effluent to MPLP power generation facility through 4,600 linear feet (lf) of 14-inch ductile iron force main. It then flows through a 16-inch distribution line to a storage tank, and is used as cooling water within the four (4) cooling towers that are fitted with drift eliminators. During the cooling process, approximately 75 percent of the reclaimed water is converted to steam, and the remaining 25 percent returns to the WWTF by gravity through 5,200 lf of 36-inch ductile iron sewer main to the beginning of the treatment process.

4. Location of each reuse site, including:

a. Responsible party for managing the use:

MPLP power generation facility is responsible for managing the reuse.

b. Reuse volume:

The MPLP power generation facility can purchase up to 1.5 mgd of effluent wastewater from the WWTF.

c. Nature of the reuse:

The reclaimed water is used as cooling water at the MPLP power generation facility.

Reuse Management Plan
Reclaimed Water Use Permit: BRP WP 84 - #X231699
Milford Wastewater Treatment Facility
Milford, Massachusetts

d. Means water is distributed and used:

The reclaimed water is distributed to the MPLP power generation facility where it is converted to steam or recycled back to the Milford WWTF. The reclaimed water is maintained in a closed system not accessible to the public.

5. *Procedures for ensuring compliance with 314 CMR 20.00 and Plumbing Code:*

Not applicable. There is no plumbing associated with the reclaimed water system.

6. *Procedures for implementing a cross connection control inspection and testing program per 310 CMR 22.22:*

The water reuse distribution system is not publicly accessible. Therefore, no cross connection control inspection and testing program is required.

7. *Confirm that the reclaimed water is not used for public use:*

The reclaimed water is not for public use.

Exhibit D

Charles River Monitoring Program Quality Assurance Project
Plan (QAPP)

Milford Power, LP
108 National Street
Milford, Massachusetts 01757

Charles River Monitoring Program
Quality Assurance Project Plan (QAPP)

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1.0 INTRODUCTION

1.1 Project Description and Objectives

Milford Power Limited Partnership (MPLP) operates a 149 megawatt (MW) natural gas fired generating facility in Milford, Massachusetts. Cooling water for this facility consists, in large part, of treated effluent from the Milford Wastewater Treatment Plant (MWTP).

The generating facility became operational in January 1994 and the monitoring program has been in place ever since. The information collected has served to establish both the background conditions and the post-diversion conditions from which to estimate the environmental impacts of the generating facility on the Charles River.

The Monitoring Program is modified when deemed necessary from program data reviews. This Quality Assurance Project Plan (QAPP) describes the Quality Assurance/Quality Control requirements for the continued sampling monitoring efforts that are a part of the modified Monitoring Program for MPLP as required by MassDEP (see Appendix E). This plan encompasses the permit period (5-years). It describes in detail the field activities which will be conducted for the monitoring plan, and includes quality assurance practices and procedures for conducting and documenting the field studies. In addition, the data documentation, analysis and reporting procedures are outlined.

1.2 Quality Goals

To meet the project objectives, the quality of the data can be described in terms of completeness, representativeness, accuracy and precision, comparability, and traceability. These terms are defined below.

1.2.1 Completeness

Completeness can be measured by the adequacy in quantity of valid measurements to prevent misinterpretation and to meet the project needs. Completeness is addressed in two ways as follows:

1. Design of the monitoring program by the maintenance of the monitoring site and the management of data quality.
2. Implementation of the monitoring program by the maximization of successful sample collection, analysis, and field documentation.

The completeness of data and the corresponding field documentation is a primary quality control objective. Documentation records must be completed and maintained to acknowledge field data collection and analysis credibility.

1.2.2 Representativeness

Representativeness is the extent to which discrete measurements accurately describe a characteristic of a population, parameter variations at a monitoring point, or an environmental condition. Good representativeness is achieved through careful, informed selection of monitoring sites to avoid interferences, contamination, and loss.

1.2.3 Accuracy and Precision

Accuracy is the agreement between a measurement and the true value. Precision is the degree of variability among individual measurements of the same property under similar conditions.

1.2.4 Comparability

This term represents the extent to which comparisons among different measurements of the same quantity or quality will yield valid conclusions. Comparability among measurements will be achieved through the use of standard procedures and standard documentation media throughout the program. Comparability between investigation results and those obtained by other researchers will be ensured through the use of methods endorsed by the USGS and other recognized authorities.

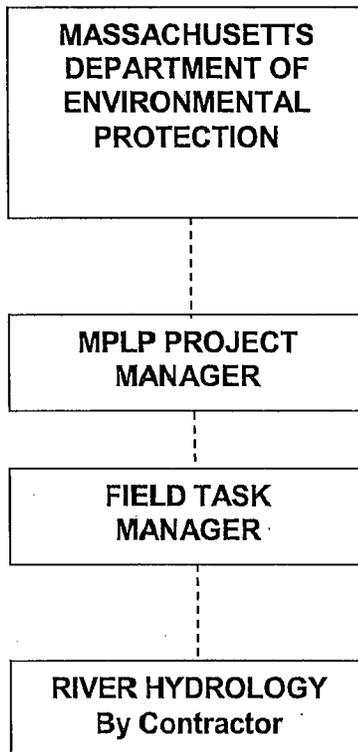
1.2.5 Traceability

All data must be substantiated by electronic files &/or hard copy documentation. Field data must be traceable to specific monitoring sites. Measurements must also be traceable to recognized standards.

1.3 Project Responsibilities

The organization for the Monitoring Plan of the Charles River is presented in Figure 1-1. The MPLP project manager is responsible for final approval of the project QAPP. The responsibilities of the key personnel in the organization are described below.

FIGURE 1-1 Monitoring Plan Project Organization



1.3.1 Project Overview

Overview of this monitoring program is provided by the MassDEP.

1.3.2 Project Manager

The MPLP Project Manager is responsible for:

- Reviewing all project data,
- Scheduling all activities,
- Authorizing revisions to the QAPP,
- Communicating with and coordinating all field task managers

1.3.3 Field Task Manager

The field task manager will be in charge of monitoring of the river hydrology. The field task manager is also responsible for the overall coordination of the field program described in this plan. The field task manager will:

- Plan, scope, and monitor task progress,
- Prepare work plans and QA plans,
- Review data schedule,
- Communicate all information to the MPLP Project Manager,
- Manage and document field activities,
- All field activities are performed in accordance with this QA project plan,
- Control and archive all field documentation (log books, notebooks, data sheets, etc.)

1.3.4 Training

All personnel working on this project will be properly trained and qualified individuals. Prior to commencement of work, personnel will be given instructions specific to this project covering the following areas:

- Organization, lines of communication, and authority
- Overview of the work plan and QA project plan,
- Documentation requirements,
- Health and safety considerations,
- Monitoring techniques.

2.0 STUDY DESIGN

In general, the monitoring plan consists of monitoring and data collection in Stream flow and river stage. This section describes the location and criteria for selection of the monitoring station, and lists the parameters that will be sampled.

2.1 Location of Monitoring Station

The Stream-flow hydrology is monitored using a secured river stage upstream of the South Howard Street crossing of the Charles River. This location provides a natural hydraulic control, is easy to access, and is close enough to the MWTP to allow prompt measurement of critical low flows. This station is a secured monitoring point, with continuously recording monitoring equipment. Maintenance of the station to provide accurate stage measurements is described in the Preventative Maintenance Manual, or PMP (Appendix A).

The stage:discharge relationship is checked for accuracy annually using three or more separate measurements during low-flow periods. The Standard Operating Procedures for stream flow and River Stage Verification can be found in Appendix B,

2.2 Sample Parameters

2.2.1 Stream-flow Hydrology

Parameters to be measured include:

- River stage at the river flow gauging station (continuous measurement by pressure transducer, data stored by MPLP's Distributive Control System (DCS) downloadable into Excel files), and
- Measurement of stream flow will be made annually using three or more separate measurements during low-flow periods in order to confirm or refine the stage:discharge relationship.

3.0 FIELD PROCEDURES

Field procedures for the collection of stream-flow measurements are presented below. A Standard Operating Protocol (SOP) for stream-flow measurement is included in Appendix B.

3.1 Stream-Flow Hydrology/Stream-Flow Measurement

3.1.1 Measuring Stream Flow

Stream flow will be measured at a location near the stream gage for the purpose of checking the accuracy of the established stage:discharge relationship (rating curve). The stream gage itself measures only river stage. Conversion of stage to discharge is made using the rating curve. Stream-flow measurements will be collected three or more separate times annually during low-flow periods

Measurement of discharge will be made according to the velocity-area method. The velocity-area method is frequently used and recommended by the USGS. The USGS has a well established procedure to guide this type of measurement (for details, see Appendix C, Rantz, 1982). Application of the velocity-area method involves measurement of water velocity at numerous points throughout the river cross-section at a specified transect. Point measurements of water velocity are then assigned to cross-sectional areas and summed to estimate total river discharge at the specified transect. Each discharge measurement will include measurement of flow velocity at each of a minimum of 25 cross-sectional subsections of the transect.

Velocity measurements will be collected using a "rotating cup" current meter. In accordance with MPLP's permit, as a quality assurance/quality control measure, verification flow measurements will be obtained at an approved USGS gage, with established and stable ratings, once every two years (i.e., a stream-flow control location). In consultation with the USGS, the Assabet River gage at Maynard (#01097000) was selected for use in validating the accuracy of the Charles River measurements (see Appendix C for Confirmational Stream Gaging documents). The flow measurement made by MPLP's contractor at the Assabet River will be compared with the measurement indicated by the USGS rating curve. This exercise will provide a validation of the accuracy of the equipment and the measurement technique employed as part of this plan. The specific details of this component of the stream-flow validation procedure was outlined in a letter to the MassDEP dated August 27, 2003 (Appendix C) and remains in force throughout the continuous monitoring period.

Stream flow will be measured at the Conrail Bridge. This location was selected for stream-flow measurement because the river is relatively straight, stable, and easily accessible. This is the same station used during the previous monitoring program. Stream-flow measurements collected at the Conrail bridge location have been compiled to form a rating curve. The most important section of this curve, for purposes of this project, is the low end where flows are smallest. Measurements of flow will be taken to confirm this curve three or more times annually during low-flow. If alignment of the measurements indicates a change in the stage:discharge relationship has occurred, a new relationship will be developed and used starting following change in the rating curve within MPLP's DCS and notification of the MassDEP and the USGS.

Accuracy of field stream-flow measurements will be made using an approved USGS gage. Flow measurements will be taken in the field at an approved USGS gage once every two years. Flow data collected in the field will be compared to Massachusetts Real-Time Data posted on the

Internet. This comparison will evaluate the accuracy of field monitoring technique and the equipment used to evaluate stream flow.

3.1.2 Storage and Transfer of Data

Stream-gage measurements will be transferred in real-time to MPLP's Distributive Control System (DCS) via a telemetry system. Stream-gage measurements will be converted to river flow using the rating curve. Thus, real-time river flow data will be integrated as a power plant operation parameter. Stream-gage measurements recorded by the DCS will be analyzed in accordance with MPLP's permit requirements.

Measurement of stream flow in the field will be recorded in a field notebook and transcribed into Microsoft Excel for stage:discharge and USGS gage comparisons.

4.0 QUALITY CONTROL

Quality control (QC) procedures will be followed in all phases of the monitoring program.

4.1 Quality Control in Stream-Flow Measurements

Stream flow will be measured during low-flow periods to verify the stage:discharge relationship. In addition, stream-flow measurements will be made once every two years (during odd years) at an established USGS gage station to quantify measurement or instrument error. Values collected in the field will be compared with Real-Time Data posted on the Internet.

4.2 Field Log Book

The Field Task Manager will maintain a detailed log book, for recording information that is not recorded in sample log sheets or other documentation media. All entries in this log must be accompanied by the signature (initials) of the author, and the date and time of the entry. At the beginning of monitoring, personnel will start the daily log by entering the date and time of operations start-up, the monitoring to be performed, weather conditions, and any potential problems. During each day, monitoring personnel will enter the following kinds of information:

- Changes in weather conditions
- Unusual circumstances
- Communications with other monitoring teams, other members of the project team, or local residents/workers
- Brief summary of monitoring or measurement procedure including any procedures used that do not conform to the QA project plan
- Instrument problems - a description of symptoms and corrective action taken

- Calculations
- List of photographs taken & description of subject and its significance

5.0 DOCUMENT CONTROL

Control of and accounting for documents generated during the course of the project will be achieved by assignment of the responsibility for document issuance and archiving to key project personnel. Table 5-1 lists the key documentation media for the field program, and corresponding responsible parties for issuance, execution, and archiving. The field notebooks will remain in the possession of the MPLP Program Manager or designee until the conclusion of the monitoring program. Upon completion of the monitoring program, all records will be placed in the project central file located at MPLP.

In addition, all documentation for the project will either be recorded in non-erasable ink in reproduction quality, or will be photocopied promptly upon completion and the photocopies signed and dated. All records will be signed and dated by the persons completing them. Any problems encountered and corrective actions used to mitigate these problems must be documented as part of the field and analytical activities, where applicable.

Table 5-1

Document Responsibility

	Issuance	Execution	Archiving
Field Notebooks	Field Task Manager	Monitoring Team	Field Task Manager
Sample Log Sheets and Field Data Sheets	Field Task Manager	Monitoring Team	Field Task Manager
Reports, DCS, and formal communications	MPLP Project Manager	MPLP Project Manager	MPLP Project Manager

6.0 PREVENTIVE MAINTENANCE

All equipment will be visually examined upon arrival at the monitoring site to assure that it is in good working order. It will be re-examined upon completion of monitoring and cleanup to assure that equipment remains in good working order. Routine maintenance of the stream stage recording equipment is described in the PMP (Appendix A)

Any improper functioning of the current meter will be noted in the field notebook, and the equipment will be sent for repair upon return to the office. If the malfunctioning of the equipment prevents completion of regularly scheduled monitoring activities, the activities will be completed at the soonest possible date with repaired or alternate equipment.

7.0 DATA REDUCTION, ANALYSIS AND DISTRIBUTION

The purpose of data analysis is to document that plant operation does not cause the instream flow in the Charles River to fall below the permitted threshold of 3.06 cubic feet per second (cfs). A Low-Flow Response Plan (LFRP) has been developed for the project to ensure that diversions of POTW effluent does not cause stream flow to fall below the minimum requirements (Appendix D).

7.1 Data Analysis

Hydrologic data analysis will consist of:

- Conversion of river stage to river flow. This will be affected at a high frequency for the control of cooling tower source water. Discharge data will be recorded on an hourly basis for reports related to this monitoring program.
- Plots of Flow vs. Time: yearly time scale. Daily average flow will be calculated and plotted vs time for one year. This plot will show monthly or seasonal changes in the flow regime.
- Plots of Flow vs. Time: monthly (or weekly) time scale. Hourly average flow will be calculated and plotted vs. time for one month. This plot will show the fluctuations in river flow within a given day.

7.2 Reports

7.2.1 Reporting Schedule

Data collected as part of the monitoring program shall be sent to the MassDEP in accordance with the following schedule:

Hydrology - by the 15th of the month, for previous months' data

Stream Gage Confirmation Measurements – annually, on or before March 1st for the previous year's data

7.3 Progress Reports

Annual progress reports will document the status and schedule of fieldwork, data collected, problems encountered and data analysis. The reports will be distributed by March 1st of each year to MassDEP (as stated above).

7.4 Peer Review

All reports will be reviewed prior to transmittal to ensure consistency with the project objectives and appropriateness of interpretations, conclusions, and recommendations. A staff member whose professional qualifications are at least equivalent to those of the originator will conduct the review.

7.5 Potential for Modification of the Stage:Discharge Relationship

The relationship between observed river stage and estimated river discharge. (the stage:discharge relationship or rating curve) is a critical aspect of the effort to monitor flow in the Charles River and control the diversion of effluent as necessary. As described in Appendices A and B, the rating curve will be confirmed by at least three separate measurements every summer during low-flow conditions. In the event that one or more of observed flow measurements are found to differ by more than 10% from the predicted flow, the rating curve will be re-evaluated according to the following sequence of events:

1. Stream-flow data collected by a qualified third party during site visits will be processed immediately after measurement and checked against the rate of discharge predicted by the rating equation.
2. If the data indicate that actual flows in the Charles River may vary by more than 10% in comparison to flows predicted using the rating curve in operation at the time, additional measurements will be made to verify the condition.
3. If the average discrepancy between the rating curve and the measurements is less than 10%, the existing curve will be retained. If the average discrepancy is greater than 10%, a new rating curve will be fit to the resulting data.
4. In the event that the rating curve is modified, MPLP will be notified of the changed rating curve. MPLP will change the rating curve used by the DCS to convert observed stage to river flow.
5. The relevant data and the updated curve (including its mathematical expression) will be transmitted to the MPLP Plant Management team.
6. The change of the rating curve in the DCS should be communicated to MassDEP and the USGS via letter. The letter should include the relevant stage and discharge data, the circumstances of the observations (e.g., date and time), and a presentation of the new rating curve relative to the previous one (both graphically and as equations).

8.0 REFERENCES

Rantz, S.E., (1982). Measurement and Computation of Stream flow: Volume 1. Measurement of Stage and Discharge. Volume 2. Computation of Discharge, U.S. Geological Survey Water Supply Paper 2175, U.S. Government Printing Office, Washington, D.C.

APPENDIX A

Preventative Maintenance Plan

Preventative Maintenance Plan

Stream Gage Station

South Howard Street Railroad Crossing, Milford, Massachusetts

This Preventative Maintenance Plan (PMP) documents the procedures for: installing and maintaining the automated stream stage measurement equipment and verifying that the data transmitted to the Distributive Control System (DCS) is accurate.

1.0 Transducer Installation Procedure

This section describes how to install the pressure transducer component of the river flow monitoring system. The transducer is located inside the stilling well at the bank of the Charles River near the Milford Wastewater Treatment Plant (MWTP). The transducer measures pressure at the elevation at which it is placed. The telemetry system at the treatment plant then uses the density of water to convert this pressure into water depth, transmitting that data to the DCS.

1.1 Required Materials

The following materials will be needed to install a new pressure transducer:

- Stevens SDX Pressure Sensor (93720-005, 0-5 ft range, or equivalent);
- Stevens Desiccant Cartridge (93030-010 or equivalent);
- 3 people (2 with radios);
- Clear plastic cylinder for calibration (2 feet in length);
- Logbook;
- Tape measure;
- Ratchet set;
- Standard screwdriver;
- Electrical tape;
- Nylon cord; and
- Safety knife.

1.2.1 Replacing Existing Transducer

Remove the cover of the hand-hole closest to the road. Open the white junction box located in the hand-hole and disconnect the wires coming from the transducer that is currently in place. With the electrical tape and the nylon cord, fasten the new transducer to the end of the cable just disconnected from the junction box.

Next, remove the cover of the hand-hole closest to the riverbank. This will require removing four bolts and prying the cover off with the screwdriver. From this hand-hole, pull the existing transducer out of the water.

The new transducer is now put in place by one person feeding the new transducer into the roadside hand-hole as another pulls the currently installed transducer from the hand-hole at the riverbank. A third person should guide the transducer through the two intermediate hand-holes. Continue to pull the new transducer until it has reached the hand-hole closest to the river. Be sure to pull enough cord through so that the calibration procedure may be performed at the riverbank.

Finally, connect the red, black, and bare wires from the newly installed transducer to their counterparts in the junction box in the roadside hand-hole. Replace the desiccant cartridge in the junction box.

1.2.2 Calibration of Transducer

The calibration procedure configures the telemetry system so that it properly converts the 4 to 20 mA signal coming from the pressure transducer into water level. The calibration will require two people, each with a hand-held radio. One person will be located at the telemetry station at the MWTP, and the other will be at the river bank handling the transducer.

The transducer is placed in a container of water which has been filled so that the transducer is under at least 17 inches of water. The container should be on a level surface so that water depth is uniform across the container. The distance from the water surface to the transducer membrane is measured with a tape measure. This measurement is relayed to the person at the telemetry station, who, following the manual, adjusts the programming so that the readout matches the depth measured in the container. Calibration is now complete.

1.2.3 Installing Transducer at Correct Elevation

Placing the transducer at the correct elevation will require three people. One person will be located at the telemetry station at the MWTP, one will be located at the river bank handling the transducer, and the third will be at the railroad bridge observing the height of the river on the staff gage. The person at the telemetry station will need to be in radio or cell-phone contact with the person at the transducer.

The transducer should be placed such that its membrane is 20 centimeters below the zero mark on the staff gage. The person at the railroad bridge will relay the staff gage level (X cm) to the person at the transducer. With the help of the person at the telemetry station, who will call out sensor depth over the radio, the person handling the transducer will place it at the required depth (20 + X cm). Record this depth in the Control Room Log. Once the transducer is at this depth, the transducer cable will be fixed in place using a cable clamp located in the riverside hand-hole. Mark the point at which the cable is clamped with a piece of electrical tape.

The last step in the installation is setting the offset. This forces the telemetry system to add or subtract a set value from the signal sent by the pressure transducer such that the value on the readout matches the observed stage in the river at the staff gage. The staff gage reading should be relayed by radio to the person at the telemetry station. The offset, which should be equal to -20 cm, is then programmed into the system following the procedure in the system manual.

Record the offset in the Control Room Log. At this point both the staff gage and the telemetry system readout should indicate the same depth, and the transducer installation is complete.

1.2.4 Calibration of DCS

After verifying that the readout at the telemetry station is accurately reading stage, the person at the MWTP will call the power plant control room to verify that the readout at the DCS is correct. The offset at the DCS will be adjusted until the two readings are in agreement. At this point both the readout at the telemetry station and the readout at the DCS should indicate the same depth, and the DCS calibration is complete.

2.0 Preventative Maintenance Procedures

This section describes a set of maintenance procedures that have been developed to ensure the proper operation of the river flow monitoring system. The procedures will be carried out mostly near the summer and fall when flows are typically lowest.

2.1 Standard Maintenance

The following maintenance procedures will be performed monthly from April through October:

- Verify calibration by comparing water level at the staff gage with the readout at the telemetry system and the DCS. During periods of moderate-to-high flows (stream flow of more than 6 cfs as indicated by the staff gage reading and the rating curve in operation at the time of observation), all readings should agree to within 1.0 cm or less. During periods of lower flow (stream flow of less than 6 cfs), all readings should agree to within 0.5 cm or less.
- Verify adequate charge on backup battery supply at telemetry station. Charge should be within 11.5 to 12.5 volts.
- Inspect desiccant cartridge at junction box. Desiccant should be blue, not yellow or red (depleted).
- Verify that there are no obstructions in the river at the hydraulic control (i.e., under the railroad bridge, in the pool located immediately downstream of the bridge, or in the first several feet of the river below the pool) which could cause the system to generate artificially high flow values.
- Inspect the transducer stilling well. Clear out any debris to ensure good hydraulic connection with the river channel.

During the winter months, access to the staff gage often represents a significant safety risk due to its remote location and the potential for ice and snow accumulation.

2.2 Low-Flow Procedures

During low-flow periods (targeted for stream flows of 6 cfs or less using current rating curve), river flow will be measured with a hand-held flow meter three or more times. Measurements will be

made in accordance with the Quality Assurance Project Plan (QAPP) for the Charles River Monitoring Program. Corresponding flow and staff gage measurements will be compared to the existing stage:discharge relationship. The measured flow at a given water depth should be within 10% or less of the flow determined using the stage:discharge relationship. If measurements consistently indicate that flows vary by more than 10% relative to estimates from stage, the stage:discharge relationship (rating curve) may be revised following the process discussed in the QAPP (see QAPP Section 7.5).

During the operation of the low-flow procedures, verification of stage measurements at the river, the telemetry station and the DCS will be conducted to verify that all readings are within 0.5 cm or less.

2.3 Corrective Actions

In the event of a problem or system malfunction, corrective action will be made within 24 hours, if possible. If a problem or malfunction could result in an excursion below withdrawal limits, effluent diversions will be halted unless alternative methods of river monitoring can be undertaken. Possible malfunctions and their corresponding corrective actions are described in table 2-1.

Malfunction/Problem	Corrective Action
Telemetry System readout differs from staff reading by more than 0.5 cm.	Adjust transducer setting or telemetry system offset to staff reading. Replace faulty parts if needed.
DCS readout differs from staff reading by more than 0.5 cm.	Adjust DCS offset. Replace faulty parts if needed.
Backup battery has inadequate charge.	Check all connections. Replace faulty parts if needed.
Desiccant cartridge is yellow or red.	Replace with fresh desiccant (blue).
Obstruction at control point in river.	Make discharge measurement to determine backwater, if any, remove obstruction, allow approximately 30 minutes for flows to stabilize, then make second discharge measurement to determine if a return to stage:discharge rating has occurred. If flow dynamics have changed, verify the stage:discharge relationship.



APPENDIX B

STANDARD OPERATING PROCEDURES

Stream Flow and River Stage Verification

Standard Operating Procedures:

Stream Flow and River Stage Verification

South Howard Street Railroad Crossing, Milford, Massachusetts

This Standard Operating Procedure (SOP) documents the technical procedures for verifying that stream-flow measurements made at the South Howard Street railroad crossing are sufficiently accurate for controlling the rate of water diversion from the Milford Wastewater Treatment Plant (MWTP) for cooling purposes at the Milford Power Limited Partnership (MPLP) power generating facility in Milford, MA. The SOP consists of two separate but related tasks: verification of automated stage measurements; and verification of stream-flow estimates from stage measurements.

1.0 Introduction

The stream gauging station is located near the South Howard Street railroad crossing downstream of the point of discharge from the MWTP. A staff gauge is installed at the station for observing the stage, or height of water, in the channel. Through measurements of stream flow at various stages, a stage:discharge relationship has been established, allowing the estimation of stream flow from observations of stage. A pressure transducer has also been installed at the station, transmitting information on stage to a telemetry station at the MWTP. From the MWTP, a signal is then sent to the Distributive Control Center (DCS) at MPLP, which controls the pumps that divert water for cooling purposes. The DCS also records the observed stage, the time of observation, and the river discharge estimated from the stage.

A minimum target flow of 3.06 cfs has been established at the location for the operation of the diversion. At such time that the stage readings indicate stream flow in the Charles River is approaching the minimum flow level, diversions are reduced in accordance with the *Low Flow Response Plan* (LFRP) to prevent the potential for diversions from the MWTP for causing flow in the Charles River to fall below 3.06 cfs. Due to other upstream activities and natural hydrogeological variations, flow at the station does fall below the regulated level of 3.06 cfs irrespective of diversions by MPLP. During these low-flow periods, no diversions are taken from the MWTP and MPLP obtains any needed cooling water from alternative sources.

The South Howard station was selected based upon the relative stability of the streambed, which is rocky and laterally constrained by the railroad crossing. In comparison, the streambed at other nearby locations consists primarily of fine sediments that are more prone to shifting and erosion/deposition. While the channel stability at the station represents the most favorable local conditions for a consistent and sustainable relationship between stage and discharge, it is less than ideal in terms of measurement accuracy.

While it is generally accepted that a properly conducted measurement will result in a stream-flow estimate that is accurate to within ± 3 to 6% of true stream flow (Sauer and Meyer, 1992), several site specific factors contribute additional potential sources of measurement uncertainty. The rocky nature of the channel contributes to some uncertainty in water depth at each point of

measurement along the velocity-depth profile as well as the potential for oblique flow angles. Also, variations in the rate of discharge from the nearby outlet of the MWTP commonly results in changes in stage and flow during the measurement process. Care is taken to minimize and account for these potential sources of uncertainty, however, due to these site-specific factors, any individual flow measurement should be assumed to be accurate to within 10% of true stream flow.

This SOP is focused primarily upon periods of low flows (i.e., river discharge of less than 6 cfs) to ensure that any diversions from MWTP will not cause stream flow to fall below the minimum protection level established for the project. Adherence to the SOP will also provide for reliable measurements during periods of high-flow and periods.

2.0 Transducer Verification Procedure

The following procedures are to be followed to verify that the river stage measured by the staff gage at the station is accurately conveyed to both the MWTP and MPLP via the pressure transducer and associated data logger. The staff gage is a Stevens Enameled Staff Gage Type M (or equivalent) which is marked in 1 cm (0.033 ft) increments. The pressure transducer is a Stevens SDX Pressure Sensor (or equivalent) that is installed in a stilling well hydraulically connected to the Charles River at the station.

The transducer is calibrated for a pressure range of 0 to 5 feet, and has a stated accuracy of $\pm 0.25\%$ full span (± 0.0125 ft, or 0.38 cm). The transducer transmits a 4-20 mA signal to the telemetry system at the MWTP, where data on pressure is converted to a height of water in cm. That data is then transmitted to the Distributive Control System (DCS) at the MPLP where it is used to make decisions on the diversion of water for cooling.

In accordance with the *Preventative Maintenance Plan* (PMP) for the project, the transducer has been set at a specific depth to maintain proper submersion under all conditions. After installing the transducer, the level offset at the telemetry station and the DCS was adjusted through radio communication such that both readouts were within 0.5 cm or less (0.016 ft) of the height of water observed at the staff gage.

Ongoing calibration of the automated stage readings occur a minimum of once a month from April through October. During these checks, MWTP and MPLP staff will verify that the readouts continue to reflect the actual stage in the river. During periods of moderate-to-high flows (6 cfs or more as indicated by the rating curve), if either readout varies from actual river stage by more than 1.0 cm, either the system offsets or the transducer setting will be adjusted until all are in agreement. During periods of lower flow (less than 6 cfs), adjustments will be made until all readings agree to within 0.5 cm. Additional stage verifications will be undertaken during the rating curve verification procedure described in Section 3.0 of this SOP.

The staff gage will continue to be surveyed every other year to check for any potential physical shift in positioning. No such shift has been observed during the historic use of the station.

3.0 Rating Curve Verification Procedure

The following procedures are to be followed to verify that the river discharge estimates are sufficiently accurate for use in diversion decisions and for the monitoring of low-flow behavior at the station. The original rating curve was developed through stage:discharge measurements taken in 1991 through 1993. During a brief period in 1999, the rating curve was adjusted to accommodate a temporary physical alteration of the channel, after which discharge has been predicted using the original relationship. More recent data (2009 to 2010) indicate that during low-flow periods, flow in the Charles River at the South Howard Street station is higher than predicted by the rating equation. In other words, diversions are ceased much more frequently and for longer periods of time than required by actual flows in the river. This SOP outlines the steps involved in verifying the rating curve and initiating alterations as appropriate.

During low-flow periods (targeted for 6 cfs or less), stream flow at the station is measured three or more times each year by a qualified third-party technician using guidelines and equipment approved by the USGS for conducting discharge measurements. (It should be noted that during very wet years, flows may not drop below that target level.) Every other year, MPLP's qualified third party technician and associated equipment are evaluated by the USGS in a side-by-side gauging event at a comparable channel (rocky streambed during low-flow periods) to verify that proper measurement and maintenance techniques are being used.

If multiple measurements at the South Howard Street station indicate that the rating equation is off by more than the 10% uncertainty associated with those measurements (two or more consecutive readings that are consistently higher or consistently lower than discharge estimated from the rating equation), the rating curve will be revised (see Section 7.5 of the QAPP). If the measurements indicate that a rating curve shift is required or justified, the revised stage:discharge relationship will be used in the processing and reporting of data starting at the time of discovery.

A new rating table and associated documentation will be developed following USGS guidelines (Sauer, 2002) and submitted to MPLP for use in diversion decisions. MPLP will then notify the MassDEP and the USGS of that change in writing.

The decision to revise the rating curve may be initiated even if discharge estimates are within 10% of measured flow. For instance, if there is a physical change to the channel that impacts the stage:discharge relationship at certain flow levels, an alteration to the equation may be justified even if flow data have not been observed to vary by more than 10%. At any time that the rating equation is altered, the agencies will be notified by MPLP.

Stream-flow data collected by MPLP's qualified third party during site visits will be processed immediately after measurement and checked against the rate of discharge predicted by the rating equation. If the data indicate that actual flows in the Charles River may be more than 10% different than flows predicted from the rating curve in operation at the time, attempts will be made to verify the finding through repeat measurement. When available, a backup meter may be used during verification. It needs to be noted, however, that stage and stream flow can change rapidly at this station due to variations in the rate of discharge from the nearby outlet of the MWTP.

If repeat measurements verify that actual flows in the Charles River are different than predicted by the rating curve, a revised stage:discharge relationship will be estimated and provided to MPLP for ongoing diversion decisions. Further refinements to the rating curve may be required as additional data are collected under different stage and discharge conditions.

4.0 References Cited

Sauer, V.B. and R.W. Meyer, 1992, Determination of Error in Individual Discharge Measurements: U.S. Geological Survey Open-File Report 92-144, 21p.

Sauer, V.B., 2002, Standards for the Analysis and Processing of Surface-Water Data and Information Using Electronic Methods: U.S. Geological Survey Water Resources Investigations Report 01-4044, 91p.

APPENDIX C

CONFIRMATIONAL STREAM GAGING DOCUMENTS

AND PROCEDURE FOR MEASURING AVERAGE

VELOCITY AND DISCHARGE



Celebrating 30 Years of Excellence in Environmental Services

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August 27, 2003

Mr. Arthur Screpetis
MA Department of Environmental Protection
Division of Watershed Management
627 Main St., 2nd Floor
Worcester, MA 01608
Via FAX: 508/791-4131

**RE: Location for Confirmational Stream Gaging
ENSR Project Number 09403-007-954**

Dear Arthur,

As you know, as a condition of its MA DEP Sewer Extension Permit, Milford Power operates a stream flow-monitoring gage on the upper Charles River in Hopedale, MA. The gage is tied in real time to the Milford Power's control system and prevents diversion of Milford Wastewater Treatment Plant (MWTP) effluent to the power plant when the measured flow in the river is less than or equal to 3.06 cubic feet per second (cfs). As part of the Charles River Monitoring Program, ENSR maintains the stream flow gage including confirmation of the stage-discharge relationship (i.e., the translation between observed water surface elevation and stream discharge).

In addition to the annual confirmation of the stage-discharge relationship, the most recent Sewer Extension Permit (Renewal #W027308) indicated that Quality Assurance/Quality Control verification flow measurements must be obtained at an approved USGS gage, with established and stable ratings, every two years. The rationale behind the inclusion of this requirement in the recent permit was to demonstrate the accuracy of the equipment and measuring technique employed as part of the monitoring plan carried out by ENSR. On August 26, 2003 ENSR contacted Roy Socolow at the USGS in Northborough to discuss the availability of a suitable gage for evaluating ENSR's flow measurement techniques.

After discussing the pros and cons of several flow gages located in the vicinity of the gage maintained by ENSR at the MWTP, Mr. Socolow recommended the Assabet River gage in Maynard (#01097000) for comparison. This gage has the advantage of having a reliable rating curve and being a very good quality measuring section. It also has geometry similar to that of the Milford Power gage and is subject to similar biological conditions such as duckweed growth. While the discharge rates are likely to be higher, the velocity is relatively low as is often encountered at Hopedale. ENSR agrees with Mr. Socolow's recommendation and has monitored flow at that location previously as part of an investigation of the Assabet River. ENSR has tentatively arranged

Consulting • Engineering • Remediation



August 27, 2003
Mr. Arthur Screpetis
Page 2

to measure streamflow at this site concurrently with the USGS during the next few weeks as a means of evaluating the measurement technique. It is our hope that you find the Assabet River gage suitable for conducting the evaluation of ENSR's streamflow methods. ENSR will forward the results of the streamflow monitoring exercise to you as part of its monthly report on stream flow in the Charles River at Hopedale.

If you have questions or comments on the document, do not hesitate to me at 978/589-3189.

Sincerely,

A handwritten signature in black ink, appearing to read 'M. Gerath'.

Mark Gerath
Project Manager

cc: W. Hack - MA DEP
R. Socolow - USGS
J. Boisclair - ANP
M. Volpe - ANP
R. Maggiani - ANP
K. Helm - ENSR



United States Department of the Interior

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September 18, 2003

Mark Gerath
ENSR
2 Technology Park
Westford, MA 01886

Re: Comments on Confirmational Stream Gaging Methods

Dear Mark:

Per your request in your letter of Aug. 27, 2003, I met with Ken Heim from your office on Sept. 11, 2003 at the USGS Assabet River gaging station, to evaluate his discharge measurement techniques as they apply to streamgaging operations on the Charles River in Milford. In general, Ken demonstrated a clear understanding of the techniques and concepts used in making accurate discharge measurements. A summary of the evaluation is provided below.

Station: Assabet River at Maynard, MA 01097000.

Date: Sept. 11, 2003 @ 1345 hrs.

Total measured discharge by:

USGS = 38.7 ft³/s

Meter type = Price AA

ENSR = 38.9 ft³/s

Meter type = Price Pygmy (used at Milford gage)

Discharge computed by

USGS = Aquacalc 5000* discharge measurement computer.

ENSR = hand entries on field form and manual calculation.

The ENSR-measured discharge was +0.5% different from the USGS-measured discharge and indicates that discharge measurement techniques used by ENSR adequately incorporate the methodologies used by the USGS. This should ensure accurate results for flow measurements made at the Charles River at Milford gage.

Section Location and Measuring Technique

Ken selected the appropriate stream cross-section in which to measure flows. The USGS provided a 50-ft cloth tape as a tagline but Ken had a longer tape for use at Milford. Ken demonstrated his knowledge of how to improve the cross-section by removing rocks that impeded flows prior to making the measurement. He was aware of the need to make measurements at 25-30 sub-sections of equal discharge. He kept the wading rod and meter vertical and paid particular attention when measuring the stream depth and setting the top-setting wading rod so that the meter was at the 0.6 depth setting when measuring velocities. Ken maintained detailed notes for each sub-section measurement in a field notebook.

Ken's measurement methods involved counting meter revolutions visually (counts revolutions of a painted meter cup) and timing them for at least 40 seconds (minimum time required for each sub-section velocity measurement) with a stopwatch, then noting depth and velocity information in a field book.

Discharge Measurement Computation

After the measurement was completed Ken: 1) transferred field book data to a USGS discharge measurement sheet; 2) determined sub-section velocities from the meter rating equation stored in calculator; and 3) computed the sub-section and total discharges with a calculator. Ken required about 30 minutes to transfer information from field book to note sheet and compute the measured discharge. To quality assure the measurement computation, it should be checked prior to use in verifying the existing rating. The checking process would likely require another 15 minutes or so to complete making for approximately 45 minutes required to compute and check the discharge measurement.

The USGS measured the discharge and used the Aquacalc discharge measurement computer into which the user enters the cross-section stationing distance on the tagline and station depth measured on the wading rod. The unit then automatically counts velocity-meter cup revolutions in 40 or more seconds. When the last section is measured the user then computes the final discharge in approximately 15 seconds. Knowing the final discharge immediately after the measurement enables the user to plot the measured discharge on the rating curve to determine its accuracy. If the first measurement plots more than the prescribed percent of error from the expected discharge determined from the rating curve (typically +/- 5%), a second confirmation or "check" measurement is required to confirm or refute the first measurement. Upon returning to the office, all measurement information is printed out and the electronic data file is stored for later checking and reviewing by office staff.

The only area where improvements may be suggested involve the manual method of computing the discharge measurement. I offer the following suggestions that will reduce potential errors and expedite the measurement computation.

1. Attach a copy of the USGS discharge measurement sheet to a clip board and note stationing, depths, and velocities directly on the sheet rather than spending additional time and risking transpositional errors while copying these data from field book to note sheet on the bank.

2. Use the velocity-meter conversion table (usually provided with each current meter) to convert revolutions in time to velocity in ft/sec rather than a calculator programmed with the meter rating equation to do the same.

3. Consider using the headphones to hear clicks made for each meter revolution rather than making visual observations of meter revolutions, which may become tedious and tiring. If water clarity is poor, the visual method of counting revolutions may be difficult or impossible.

4. Consider purchasing an automated counting device that records counts of each revolution, times the count for 40 or more seconds, then displays the average velocity in ft/sec for noting on the measurement form.

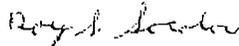
5. Consider using one of a variety discharge measurement computers currently on the market (Aquacalc*--JBS Industries; DMX*--Sutron Corporation). These devices are designed to meet USGS measurement standards and both have been used successfully for several years by the USGS and other agencies involved with making flow measurements. Although the cost for such devices is high (approximately \$2,000) the USGS has realized substantial savings in time, improved accuracy in measurement computations, and improved storage and tracking of electronic discharge measurements.

In conclusion, Ken Heim and ENSR are making and computing streamflow measurements in a manner that is consistent with the methodologies used by the USGS. Please feel free to forward these findings to any interested agencies or individuals.

I would like to thank ENSR for allowing the USGS to observe, review, and comment on their discharge measurement techniques. Please call me at 508-490-5059 if you have any questions or comments.

* Use or mention of this product does not constitute an endorsement for such product.

For the District Chief,



Roy S. Socolow
Project Chief, Streamgaging Network

cc: MA001 File

APPENDIX B

Procedure for Measuring Average Velocity and Discharge (Velocity-Area Method) after Rantz et al., (1982)

- 1) Select a cross-section from straight, uniform reach with parallel streamlines and a relatively uniform bottom that is at least 0.5 ft deep, that has velocities of at least 0.5 ft/s, and where there is easy access from cableways, bridges, or by wading. If possible, the section should be free of large eddies with upstream circulation near the banks, areas of slack water, or excessive turbulence caused by upstream bends, radical changes in cross-section shape, and irregular obstructions such as boulders, trees, vegetation, and other debris in the vicinity.
- 2) Choose a time of measurement such that the discharge is steady or approximately steady during the period of measurement that usually ranges from 1 to 3 hours depending on the size of the river. If flow changes rapidly, short-cuts in the method will be necessary.
- 3) Measure the cross-sectional area, A, by measuring depth with a sounding line or wading rod and width with hand lines or tapes. In large river, electronic depth sounders and triangulation with transits or laser distance measuring equipment are used.
- 4) Divide the section into at least ten subsections based on the expected distribution of discharge over the section. For larger rivers, typically 20-30 sections are required for precise measurements. (At the Charles River streamgauge site, the subsections have been 1-foot wide).
- 5) Measure the vertical velocity profile in each subsection. For shallower subsections (less than 2 feet), the mean velocity can be measured at 0.6 of the depth. For subsection over 2 feet, velocity measured at 0.8 and 0.2 of depth.
- 6) Compute average velocity in each subsection, u_i , from the profile (or use the mean velocity measurement).
- 7) Compute the subsection discharge, q (referring to Figure B-1):

$$q_i = u_i \left[\frac{b_i - b_{i-1}}{2} + \frac{b_{i+1} - b_i}{2} \right] d_i \quad (1)$$

- 8) Compute the total discharge from $Q = \sum q$
- 9) Compute the average velocity from Q and cross-sectional area, A: $U=Q/A$

STREAM CROSS SECTION

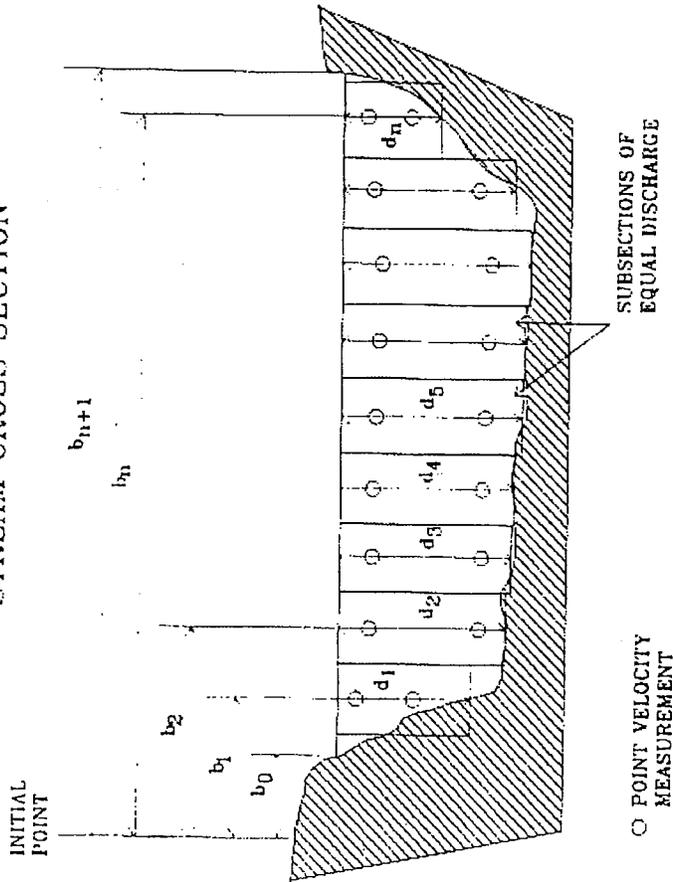


FIGURE B-1

Method to Measure Average Velocity

APPENDIX D

LOW-FLOW RESPONSE PLAN

Introduction

Milford Power Limited Partnership (MPLP) operates a 149 MW power generating facility in Milford, MA. A conventional closed web cooling tower system is used for the circulation of water through the facility to dissipate process heat and condense steam back to water. The primary source of this cooling tower water supply is treated wastewater, diverted from Milford Wastewater Treatment Plant (MWTP).

The Massachusetts Department of Environmental Protection (MassDEP), through the issuance of the POTW's water re-use permit, regulates the diversion of treated effluent from the MWTP to the MPLP facility. In consideration of the potential adverse effect the diversion to the power plant, Sewer Extension Permit #24633, was issued to MPLP Limited Partnership on April 1, 1992 and became effective on May 1, 1992.

Monitoring of Charles River Stream Flow Downstream of the MWTP

A stream gauging station has been in operation at the South Howard Street railroad crossing downstream of the MWTP. The station is instrumented with a staff gauge and pressure transducer for the measurement of river level, or stage. Utilizing river level data and discharge measurements acquired at the gauging location, a stage:discharge rating curve has been established. That curve allows for accurate estimates of stream flow using stage readings.

The signal from the pressure transducer is conveyed to a telemetry station at the MWTP, which converts readings of pressure into feet of water, which in turn is relayed to the Distributive Control System (DCS) at MPLP. Those stage readings are used in the diversion decisions. When MPLP needs water for cooling and sufficient flow is available in the Charles River, the pumps are activated, diverting water from MWTP to MPLP. If the data indicate flows may not be sufficient, MPLP gets their cooling water from alternate sources.

The record of Charles River discharge will be available for review and will be distributed in accordance with Attachment A of the POTW's water reuse permit.

Outline of the Operational Adjustment Plan

Cooling tower make-up water, under normal operating conditions (i.e. not a low flow condition in Charles River), is supplied to the generating facility via a pump station located at the MWTP and a 14" diameter water transmission line running from the MWTP to the MPLP facility. These diversion pumps have variable recirculation valves capable of allowing the rate of diversion to be adjusted. Thus a variable quantity of effluent can be diverted and delivered to the cooling tower depending upon the position of these valves. The amount of recirculation will be controlled by the DCS which can be programmed to trigger certain positions at the observation of critical discharges.

MPLP has agreed to cease their diversion of MWTP effluent, so that the diversion will not cause the downstream Charles River discharge to fall below the critical river discharge of 3.06 cfs. The nature of the low-flow response by the MPLP facility is constrained by the magnitude of the diversion relative to total stream discharge at low river flow and by the position of the stream gauge relative to the MWTP effluent outfall.

As the MPLP facility scales back on its effluent diversion, the river discharge may increase, apparently indicating that further diversion is possible. Given the necessity of locating the stream gauge at a point of hydraulic control on the river, the gauge was located at a distance of about 100 yards from the outfall. There is a distinct time lag (approximately 30 minutes) between the change in MWTP effluent quantity and the recording of the resulting change in river discharge at the gauge.

In order to prevent these responses and time lags from driving decisions that may result in an accidental violation of flow requirements (stream flow of 3.06 cfs during periods of diversion), MPLP initiates diversion reductions as stream flow in the Charles River reaches a level of 3.4 cfs. By reducing the rate of diversion to maintain a target flow of 3.4 cfs (13% higher than the minimum required flow for diversions), the potential for diversions causing stream flow in the Charles River from falling below 3.06 cfs is eliminated. It should be noted that stream flow in the Charles River does fall below that minimum flow during low-flow periods even in the absence of diversions from the MWTP. During these times, MPLP gets any needed cooling water from alternate sources.